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A REVIEW OF THE PRESENT POSITION OF INTRA-TYMPANIC SURGERY IN CHRONIC SUPPURATIVE OTITIS AND IN SCLEROSIS OF THE MIDDLE EAR.

BY PROFESSOR GHERARDO FERRERI, ROME.

Translated by

Dr. ST. CLAIR THOMSON, LONDON, ENG.

Intra-tympanic surgery has rapidly overcome a very large series of difficulties. This arose partly from preconceived errors in practice and in the physiology of the ear as well as from the fear with which every medical novelty is received until the results of experience have removed all doubts. I have already to some extent treated the subject in a long article published in the *Archivio Italiano Otologia*, in the Jubilee number dedicated to Professor De Rossi in the year 1897. In that article, however, I limited myself to a consideration of suppurative processes and their results in the middle ear, and not to the sclerotic forms which are found in varying degrees up to even secondary lesions of the labyrinth. This was due to the fact that, like many others who had long studied otology, and particularly intra-tympanic surgery, I felt a certain reserve in giving an absolute opinion on the value of operative measures in chronic non-suppurative diseases of the middle ear.

While the literature of every country has contributed favorable statistics to the results of surgery in suppurative otitis media, we cannot at present say as much for the hyperplastic form and its consequences. Indeed, there is doubt whether the feverish operative

activity of certain otologists in the sclerotic form has not compromised the progress of intra-tympanic surgery and checked its real progress, that is to say preventing us from knowing, at least for a while, in which morbid forms and in what stage it is useful to intervene surgically.

The study of statistics has often been abused as elevating an altar to some new operation. They have been even employed for supporting an incredible argument, viz., according to some, that the demolition of a sclerotic mastoid will arrest a most advanced process of sclerosis in the tympanic cavity, with secondary deep alterations in the internal ear. Statistics, in themselves, are not sufficient unless pathological anatomy is kept in mind. I am of opinion that we have gone too far in attributing suppuration in the tympanic cavity to caries of the ossicles, and especially of the attic. With regard to the histological examinations in each case operated on by myself, in thirty-eight cases of purulent otitis media the ossicles under the microscope were found to be diseased in only one half. I would add that these cases had been cured by ordinary conservative methods and not by radical intervention, because the morbid process did not primarily start in the bone but in the mucous membrane. The necessity of extracting the ossicles was only required in order to re-establish hearing, which was damaged by the immobilization of the chain of bones.

(A) Intra-tympanic surgery in chronic suppuration, and its results.

Operations on the tympanic membrane in chronic purulent otitis media have been completely abandoned by me. With regard to extraction of the malleus and incus we must distinguish:

- (a) Suppurations resulting from lesions of the ossicles;
- (b) Those from the walls of the antrum, and
- (c) Those due to pyogenic processes in the antrum and mastoid cells.

It is clear that if we wish to obtain simple drainage of the middle ear in cases of suppuration of the antrum it would be difficult to attain this by simply extracting the malleus. For this we ought to follow on with avulsion of the incus, without any regard to its healthy or diseased condition. When one has simply to do with the escape of the matter from the attic, it will be sufficient to remove the malleus, even if healthy, without having recourse to the extraction of the incus. In the case of caries of the attic walls and of the aditus ad antrum I extract the incus as a preventive operation, in order to curette and cauterize the diseased parts.

Failure in intra-tympanic operations depends upon general conditions, such as tuberculosis or the presence of ozena. If the antrum and mastoid are affected the extraction of the ossicles can do no good. When the purulent process has ceased in the various cavities of the tympanum, it is then the time for surgical interference so as to improve the physical condition of the ear. Then one has recourse to section of the tensor tympani, section of the adhesions, or mobilization of the stapes.

It should be a rule not to proceed to operative measures as a result of suppuration until the latter has ceased for some time.

During the year 1897-98 the patients who were submitted to the extraction of the malleus and incus through the external meatus reached the considerable number of 86, of whom 41 were male and 45 female. With regard to ages it is to be noted that the majority were adults, as can be seen from the following table:

From 8 to 10 years.....	3 patients
From 10 to 15 years.....	12 patients
From 15 to 20 years.....	24 patients
From 20 to 25 years.....	21 patients
From 25 to 30 years.....	9 patients
From 30 to 35 years.....	6 patients
From 35 to 40 years.....	6 patients
From 40 to 45 years.....	3 patients
From 45 to 50 years.....	1 patient
From 50 to 55 years.....	1 patient

With regard to the length of time that patients had been affected, there were:

Less than one year.....	6 patients
From 1 to 5 years.....	31 patients
From 5 to 10 years.....	12 patients
From 10 to 15 years.....	5 patients
From 15 to 20 years.....	1 patient
From 20 to 25 years.....	1 patient
From infancy.....	31 patients

Of 86 patients there were 60 (69.60%) affected with purulent chronic otitis media; 26 (30.16%) with the results of suppuration. The ossicles were found affected with caries in 38 instances (44.08%), thirty-one times the malleus and seven the incus. Orne-Green (*Boston City Hospital Medical and Surgical Report*, 1895) gives a statistic of 60 extractions of carious ossicles; of these patients eight underwent simple ablation of the malleus, while in all the others the incus was also removed.

Grunert compares his statistics (*Archiv. für Ohrenheilk*, Band xl, Heft 1), I herewith compare mine:

MALLEUS.			
Bone Diseased.	Orne-Green.	Clinic of Halle.	Ferreri.
Head.....	60 %	32%	47.34%
Handle.....	50 %	25%	23.67%
Neck.....	48.3%	14%	7.89%
Superficial articulation.....	31.7%	7%	5.26%
Short process.....	13.3%		7.89%

INCUS.			
Bone Diseased.	Orne-Green.	Clinic of Halle.	Ferreri.
Long Branch.....	100 %	72%	5.26%
Body.....	84.6%	46%	10.52%
Short process.....	40.6%	43%	
Superficial articulation.....	28.8%	29%	5.26%

With regard now to a fuller pathological examination of the removed bones which were manifestly diseased, of thirty-eight cases I found that in twelve the lesions of the malleus and incus were very slight and consisted essentially in atrophy, shown by rarefaction of the bony tissue and by the diminution of volume of part or all of the ossicles. In several cases atrophied bone was seen to be surrounded by a tissue of granulations. In a larger percentage of cases on the contrary (23 in 37), I found a greater alteration in the several ossicles, consisting in circumscribed or diffused caries. In all or nearly all of these cases what struck one at first view was the deformity of the malleus or incus due to enlargement of certain parts and to the thinning or disappearance of other parts. With regard to the extension of the carious processes this was frequently found circumscribed in one portion of the superficies of the bone, sometimes more deeply. In the case in which the alteration was more serious small necrotic sequestra were found circumscribed by granulation tissue. Rarely the bone was seen to be deformed by the disappearance of some portion, although the microscopic aspect was normal; and this suggested a cured caries. The carious ossicles were generally found surrounded by granulation tissue, which was sometimes so developed as to form true polypoid vegetations.

The carious bones were sometimes altered on their articular surface, thus explaining the ankylosis of various ossicles. In none of these cases was I able to demonstrate under the microscope any tubercular change. These cases make one hold the opinion that the various alterations in the ossicles are secondary to chronic suppuration in the tympanic cavity. This opinion is not debatable in those cases in which the alteration in the ossicles is represented by a simple atrophy, or by an ankylosis of the malleus and incus. But it is also the most likely interpretation which can be given in those cases in which the bony lesion is more profound. Indeed we often see caries

circumscribed at a short distance from the surface of an ossicle; at other times we see the lesions limited to the periostem. Other considerations led to the conclusion that lesion of the ossicles, even when serious, is always secondary to diffusion of inflammation which has primarily attacked the mucous lining of the tympanic cavity.

* * * * *

Much more difficult in the present state of affairs is the appreciation of the general value of *surgical interference in the cure of chronic otitis media of the hyperplastic form* (otherwise called dry, or adhesive, or sclerotic otitis) on the choice of operative measure, and on the indications. Possibly otology from the curative point of view would have already established some more positive data for practitioners if the feverish activity of certain specialists in the surgery of the middle ear had not been so precipitate, confusing frequently in one study suppurative otitis media and its consequences with the sclerotic otitis from various causes and more or less complicated with secondary lesions of the labyrinth.

It is enough to give a glance over the otological literature of the last ten years to see that when there is a question of operative interference, of technical or surgical methods, there is most inclination to the clinical side, neglecting the distinction between one otological process and another, as if the result of the treatment did not depend in the majority of instances as much on the nature of the morbid process as on the surgical treatment.

Only latterly have we arrived at distinguishing with relative decision the limits in which surgery must confine itself, distinguishing those cases which can still be remedied from those in which nothing was to be expected in attempting to arrest the fatal progress of an otitis media chronica hyperplastica. What effects could one ever expect to have from surgery when the sclerosis has already advanced to the atrophic stage, and one has to do not with a simple rigidity of the conducting apparatus, but with an atrophy of the nerves of the basilar membrane? And what could we expect from mobilization of the stapes, and even from stapedectomy, where there exists at the same time alterations in the fenestra rotunda? And if the nervous acoustic apparatus is already so far compromised as not to hear more than the three lower octaves and even when the hearing has declined to below 20, 10, or 5 thousand vibrations, why should we still interfere knowing that even the operation of stapedectomy is demonstrably useless and even frequently harmful? It is much better to leave these unfortunate deaf patients to their unhappy lot sooner than compromise the future of intra-tympanic surgery.

It is the functional examination rather than otoscopy which will be found our best guide in this matter. In addition we should make use of the knowledge which only a careful history of the patient can inform us. Indeed it would be strange to ignore the general condition of the patient, a special diathesis, the nature of the infection which determined the progressive deafness, or the question of the menopause and of nursing in women, of the hereditary tendency to affections of the ear, of the age, of the length of time the process has lasted and lastly of the more or less rapid progress of its development. The indications for an operative measure should differ, according to my point of view, according to the predominating functional disturbance, since personal experience leads me to believe that to diminish and even to arrest paracusis and vertigo depending on labyrinthine compression it may be sufficient to remove simply the incus or the first two ossicles, whereas to arrest the steadily progressing deafness it is better to do a stapedectomy in the properly selected cases—that is to say in cases still susceptible of surgical treatment. In this I am not agreed with Burnett who observed in a series of ten cases of vertigo and deafness consecutive on sclerosis of the tympanum, that from removal of the membrane and the two first ossicles the deafness remained as previously, whereas the vertigo and tinnitus was mitigated. Burnett, therefore, in vertigo and paracusis actually limits himself to extirpation of the incus so as to limit the pressure of the stapes. (*American Journal Med. Sciences*, October, 1896.)

Any operative interference would therefore be reprehensible if undertaken in the forms of sclerosis which have already advanced to the atrophic stage, in which through the thin tympanic membrane we can easily recognize a hyperemia of the posterior wall of the tympanic cavity at the level of the promontory. These deaf people must be abandoned to their fate unless the lesion is unilateral and it is hoped, as a last resource, to practice the mobilization of the stapes and even stapedectomy on the worse ear in the hope—however problematic—of arresting a hyperplastic process which already may be much advanced on the other side. Amongst the indications which Moure gives as a *sine qua non* for surgical action would be the immediate perception of the watch applied to the bones of the skull heard better on the deafer side; a negative Rinne with both low and high tuning forks; a temporary improvement to the hearing with insufflation with Politzer's bag or the catheter. And Moure also believes that these cases of chronic otitis media sclerotica will have a more certain improvement from extirpation of the malleus and incus when a simple exploratory myringotomy gives an improvement in

hearing and diminution of tinnitus and vertigo. If the anatomical structure of the region prevents the easy removal of the incus and view of the stapes, Moure recommends the breaking away of the postero-superior part of the tympanic ring in order to discover the niche of the ossicles and mobilize the plate of the stapes, without acting directly on this latter ossicle.

Stapedectomy, first performed by Ketzell in 1877, and then by Bezold, Blake, Botey, Grunert, De Rossi, Faraci, Dench and Jack has not had, in Moure's opinion, the certain success that was expected by all these operators, there being considerable doubt as to the improvement of the tinnitus, the deafness and the vertigo. Indeed, in some cases they were aggravated. But besides, how could we believe extraction of the stapes possible in sclerosis of the middle ear of ancient standing in which the stapes is mostly surrounded by a bony mass which fills up the fenestra ovale and deposits of ossification and decalcification hide even the fenestra rotunda?

In a comparative study published by A. Cheatle on the question of operative intervention in dry chronic otitis media (*The Practitioner*, May, 1897, page 494) the opinions of some of the most illustrious otologist in the world have been collected. Cheatle states that, with few exceptions, otologists at present are either averse to any operative interference altogether or reserve their opinion in expectation of settling which cases are and which cases are not suitable for operation.

Notwithstanding the discordant and often discouraging results it is not to be denied that in a few cases remarkable relief has been obtained, if not in the hearing power at least with regard to the tinnitus. One of the strongest arguments against operation is that certain individuals are rendered worse by it. Cheatle says that in sclerosis of the middle ear the best results were obtained when the rigidity was more or less limited to the membrane, and to the two larger ossicles. He thinks that before proposing a radical treatment all other conservative measures should have been tried, and that one should never fail to warn the patient that amidst the risks of a radical operation are those of being rendered worse by it.

As a rule the exploratory opening in the membrane will always be carried out, and if no improvement results nothing further should be tried. In a favorable case, on the other hand, it will be justifiable to extract the malleus and incus and mobilize the stapes, and finally, if necessary, to remove these ossicles.

Faraci, who has recently studied this question thoroughly, gives special consideration to those cases in which the acoustic diminution

is exclusively due to immobility of the stapes by adhesions which fix the branches to the walls of the niche, as well as to functional alteration in the rest of the chain. In such cases he thinks it desirable to directly remove the obstacle which prevents the stapes from motion in the fossa ovale; since the chain of bones is the principal route through which the sound arrives at the labyrinth. If we have to do with an ear which is sound in its perceiving apparatus, and myringotomy and myringectomy reduced by a fraction however small a power of hearing of all sounds, and this diminution is still greater with disarticulation of the incus, when on the other hand by sclerosis of the tympanic cavity the acoustic nerve is not compromised by alterations of the transmitting apparatus, but by rigidity of the stapes in the fenestra, it will be desirable to put in execution this method of mobilizing the stapes which preserves intact the chain of ossicles.

For this purpose, having cut the tympanic flap after the classical method of the Roman School, and resected the external wall of the tympanic ring with his special cutting pliers, Faraci in order to remove the adhesions round the stapes makes use of certain instruments similar to the needless of Dupuytren, with which he incises and cures around the base of the stapes, without its being necessary to disarticulate the incus or cut the stapedius.

In another word on the surgery of the middle ear Faraci concludes with regard to stapedectomy that it is an operation which, more than any other method of treatment, is crowned with the best acoustic and functional results, when performed on suitable cases. In order that the improvement which is obtained immediately after the operation should be preserved he recommends always to carry out resection of the tympanic ring. Stapedectomy is contra-indicated in otitis media hyperplastica with advanced lesions of the acoustic nerve, especially if the transmitting apparatus functions tolerably well; the removal of pressure on the labyrinth which follows on the stapedectomy renders the hearing and the tinnitus worse.

Having reviewed and criticised the opinions of others on intra-tympanic surgery in otitis media hyperplastica I will formulate some personal considerations from my own experience. As a rule if in sclerosis of the ear a lesion is in its first phases, and the acoustic disturbances complained of by the patient are not very grave it would be reprehensible not to try, before having recourse to surgery, a course of general treatment, combined with intra-tympanic injections, knowing besides that even in the pre-operative period in many cases this therapeutic line of treatment has arrested the progress of the disease and improved the hearing. We should bear in mind that it is

in the intrinsic character of the morbid process in the middle ear to be erratic. To remain quiescent for months or years and then resume its progress without any apparent cause. Hence a hasty recourse to surgical interference without bearing in mind the history of periods during which the disease is active, and without remembering that improvements had been secured by injection, might precipitate our opinion. If in many cases we did not obtain from intra-tympanic injections all those results which might be hoped it is because they have been carried out either with violence, or with too great frequency, or for too long a time, so that the favorable influence exercised by them on the mucous membrane of the stapes and the mechanism of the ossicles is succeeded by an intolerance of the organ from the abuse of this method.

It is not by any means intended to be inexorably declared that we should operate on whoever is affected with sclerosing otitis, especially if we are at the beginning of the illness, when often general and local clinical treatment will suffice to arrest the progress.

In cases of incipient sclerosis in individuals who are still young and robust it would be well, when we have to combat simply hyperplasia or proliferation of the mucous membrane, to try the action of thyroid tablets, taking two or three a day of thirty centigrams (five grains) each. They were first proposed by Vulpius and confirmed in many cases by Bruhl. Or we might use the intra-tympanic injections of jequirity according to the method tried by De Rossi; or the injections of digestive ferments (the pepsin of the dog in the strength of one per 10,000) according to the methods recommended by Cohen Kysper, of Hamburg. Those cases of incipient sclerosis in the tympanum and Eustachian tube will be more susceptible of a general and local medical treatment when they are a consequence of an analogous process in the naso-pharyngeal space, not in those depending on a primary affection of the bony capsule of the labyrinth with early adhesions of the branches of the stapes.

One of the indications which sufficiently justifies surgical action is when the progressive form of sclerosis in one ear, already seriously compromised, we have to do with manifest symptoms of rapid advance of the morbid process in the other ear. The first to confirm the favorable influence on the function of hearing of the opposite ear, secondarily affected, was Urbanschitsch, and I have been able to confirm his opinion in several cases operated on by myself.

Naturally the first question put by the patient when an operation is proposed is the following: Is there a certainty or, at least, a great probability of curing my deafness? When our methods of ex-

amination have established that the tropho-neurosis has passed beyond the confines of the tympanic cavity, we must be very reserved with regard to the result of any surgical interference.

A considerable experience has taught me to interfere only in hyperplastic forms which are strictly limited to the middle ear, in which, in addition to other tests, we have the confirmation of a negative Rinne. Besides, surgical interference will be much more effective when the vertigo and paracusis, as well as the deafness, are insupportable to the patient. As was first noted by Urbanschitsch, in these cases the simple extraction of the malleus and of the incus is sufficient to arrest these symptoms and prevent further deterioration of hearing.

As a rule, if there is not deterioration of hearing, but the patients are afflicted with paracusis and vertigo, I limit my interference to extraction of the malleus and incus. It is only later on, and when the results of this operation have not proved efficacious, or have deteriorated, and the tinnitus and vertigo returns, or when there is a gradual loss of hearing, that I proceed to mobilization of the stapes, provided always that Rinne's test remains negative and that we must ascribe the deterioration of function to rigidity of the membranes of the oval and round windows. But when the patient has already, in addition to the paracusis, a decided diminution of hearing, I immediately perform temporary myringectomy. I separate the articulation of the long branch of the incus from the stapes and dislocate the former, carrying it away laterally. If able to detect the existence of false membranes around the branches, or the presence of effusions near the windows, I divide and destroy them. Eventually I divide the stapedius and mobilize the stapes by means of a probe with gum elastic extremity.

To speak frankly, however, I cannot produce any authoritative work which, with solid statistics, shows that, as a matter of fact, the mobilization of the stapes in pseudo-ankylosis of this ossicle in the niche of the oval window has brought about a permanent cure of acoustic disturbances. There are those who rather believe that, being an irritative operation, it might even aggravate the hyperplastic process in the tympanum (Grunert). If, therefore, the case requires surgical interference to diminish the acoustic disturbances associated with ankylosis of the stapes it will be preferable to perform a stapedectomy. Unfortunately the value of stapedectomy is open to discussion in so far as the results of our clinic are concerned. Hence I agree with the opinion of Politzer and Moure that the importance of the stapes is not very great and that it is not necessary to remove it, since in advanced cases of otitis media hyperplastica,

when the fixation of the stapes has already come to pass, it means that the alterations in the labyrinth and terminal nerve limits are already very serious. According to the researches of Politzer, the fixation of the stapes in such cases is produced by a new formation in the membranous labyrinth (in the capsule) of bony tissue which has invaded the plate of the stapes, so that its extraction (when successful) could not prevent the obliteration of the oval window.

Politzer expects greater success from extraction of the stapes in cases in which the fixation and rigidity depend on cicatrices and adhesions consequent on chronic suppuration in the middle ear and when the labyrinth and its capsule are intact. That the extraction of the stapes cannot bring about any permanent result in sclerosis of the tympanum was shown to me by the histological examination of the temporal bone of an old man on whom some years previously I had tried stapedectomy. In this case the sections I made, passing through the oval window, showed the niche to be completely altered by newly formed bony tissue, which had finished by soldering the plate of the stapes in parts to the margins of the fenestra.

Also Hartmann has communicated the results of his post-mortem researches on the temporal bone of two individuals afflicted with deafness almost completely dependent on bony bilateral ankylosis of the stapes (*Zwei neue Fälle von doppelseitiger Knöcherner stapesankylose*, *Zeitz f. Ohrenheilk.* xxxiii, 2). He comes to the conclusion that therapeutics have proved so far powerless to combat the evolution of this disease.

Having then made a diagnosis of ankylosis of the stapes consecutive to hyperplastica otitis media, and having thought the case operable by stapedectomy (after an examination which has demonstrated that the internal ear is not yet affected), we should always make a most reserved prognosis on the result of the operation in so far as the improvement in hearing and the sensation of paracusis are concerned. Grunert has already given the warning in his excellent memoire on extraction of the stapes. Even in the usual cases, a number of circumstances may render the result fallacious, since it is not always easy to diagnose if the ankylosis is fibrous or bony if there exist pathological modifications in the oval window and if the internal ear has not already undergone incipient and progressive alteration. In any case, with regard to the functional results of stapedectomy, we should never let ourselves expect too much and never promise too much to our patients. We should rather say that with operative interference the subjective noises and vertigo will doubtless disappear, and so we will not compromise the character and the future of otology.

HISTORY AND DISCUSSION OF A CASE WITH MENIÈRE'S SYNDROME.*

BY HEBER N. HOOPLE, M.D., BROOKLYN, N. Y.

Surgeon, Eye Department, Williamsburg Hospital, Brooklyn, N. Y.; Clinical Assistant, New York Eye and Ear Infirmary; Ophthalmologist and Otologist, Methodist Episcopal Church Home, Brooklyn, N. Y.

F. P. comes of ancestors of nervous type. One dropped dead in church. One fell dead into a pool of water. His father was ill with asthma during the last twenty-five years of his life and died of fatty heart at sixty-four years. F. P. is twenty-six years old, has been married three years, is a sculptor, is robust and plethoric, weighing 160 pounds. Has decidedly nervous temperament. The mere mention of an operation on him, however slight, excites and unnerves him.

He noticed slight impairment of his hearing in the left ear before going to Chicago in 1892. He had had no illness nor disease of any kind (except sea-sickness) previous to a certain night in December, 1892, when he awoke feeling strange, so much so that he arose to light the gas; but before he could do it he fell suddenly and heavily to the floor, and immediately fell again on attempting to arise. He then crept to the head of the stairs to call for the help of the people below him, whom he had awakened by his fall. Vomiting followed.

Two weeks later, after sitting down with friends at a restaurant, he turned his head to the left to give his order when he was suddenly seized with giddiness. The room seemed moving topsy-turvy, and then he fell over, but did not lose consciousness. He called for water and drank it freely. He was taken to the office of a near-by physician. Vomiting and purging followed.

Lighter attacks than these came frequently like a shock proceeding from his body to his fingers and toes, often lasting but a few minutes and going as suddenly as they came. One such attack came upon him as he stood holding the railing of an Illinois Central Railroad car-platform. By having hold of the railing he saved himself from falling. The attacks were accompanied by nervousness, drawing his attention to the left ear.

The aurist consulted six months after his first fall made no diagnosis. Losing his position he returned to New York. One day, when the nervousness was very bad, he hastened along the street to

*Read before the Brooklyn Pathological Society, 1899.

reach a drug store a block away, catching the railing along the sidewalk as he went to keep himself from swaying. Reaching a boot-black's chair he sat down, immediately vomited and fell over against the railing beside it. Still conscious, he requested to be taken somewhere to rest awhile, and was taken to Bellevue Hospital and put over night with the D. T. patients. Next day they gave him two dispensary cards, one for an acne on his shoulders (which came out on him with each severe attack), and one marked "epilepsy." Dr. A. advised abstinence from alcohol and excitement and high living, which he found easy to comply with, being out of work and obliged to live on scanty fare. In one month he recovered completely, and went to work in December, 1893. He had no further attacks for five years.

In June, 1898, distinct buzzing began to affect his left ear. In October another seizure came upon him gradually in his office in New York, commencing with dizziness and ending with a fall, vomiting, purging and temporary cessation of the tinnitus.

One month later he suddenly fell from the sidewalk in front of his house into water lying in the gutter. On neither of these occasions did he lose consciousness.

The tinnitus became more disturbing as time went on, especially in the quiet of the evenings and away from the noise of the busy streets. At times it was a rushing sound like that of running water, then it would suddenly change, "as if something had been shut off" in his ear, and it would become like the noise of an elevated train overhead.

The usual forms of this vertigo were a swaying in his walk and a misjudging of distance, making him plant his foot too soon or not soon enough. He said that if in walking he appeared to others as awkward as he did to himself he must attract considerable attention. When lying down in bed he would seem to go too fast and reach the bed too soon, reaching it with a horrible sinking feeling, which continued to press him down as if it would push him through the bed. When he fell in the severer attacks, the sense of sinking was even worse, as if he were being pushed into the earth. When the dizziness, nervousness and tinnitus were worst he could not hear well with the left ear. Besides, he had a feeling of fixed stare, as if he dared not turn his eyes quickly for fear of falling or swaying.

With this history he consulted me on the third of January, 1899. Heart and lungs and kidneys functioning normally. Vision acute, fundus oculi normal and media clear. No history of pain in, or discharge from, either ear. Both meati normal. Tympanic membrane in both ears presented exactly the same appearance, luster, light-reflex, color and translucency almost normal, the long process of the

incus being clearly seen in both ears, and there being but slight, if any, retraction of the membranes or rotation of the malleus. The right Eustachian tube was slightly more patent than the left, but both opened easily for Politzerization and catheterization. The right naris was normal except in a slight deflection of the septum to the left. The left, besides receiving the deflection, had a long, wide shelving exostosis, not occluding the naris, but easily permitting catheterization of left tube. Schneiderian and naso-pharyngeal mucous membranes familiarly congested, but not extravagantly so. No excess of Luschka's gland. Slight excess of faucial tonsils.

FUNCTIONAL EXAMINATION.

	Watch.	Whisper.	Speech.	Galton's Whistle.	Weber.
a. d.	$\frac{90}{120}$	40'	43'	1	=
a. s.	$\frac{18}{120}$	10'	2'	1	=

SCHWABACH	a. d.	Rinné	A. C.	A. C.	A. C.	A. C.	A. C.
		A. C.	25"	20"	31"	23"	19"
		B. C.	15"	10"	12"	5"	7"
	a. s.	C	C	C ₁	C ₂	C ₃	C ₄
		A. C.	0"	0"	15"	6"	13"
		B. C.	7"	7"	8"	3"	7"
		Rinné	B. C.	B. C.	A. C.	A. C.	A. C.

After inflation a. d. was the same; a. s. gained 1' for watch, 2' for whisper and 8' for speech. The C₁ fork, not heard before, was now heard 2" by A. C. and the C₂ fork was heard 7" longer by A. C.

Three days later watch a. s. was heard at 6", though tinnitus was then absent.

An average of three T. F. tests made during next three months gave the following for

a. s.	{	C.	C ₁	C ₂	C ₃	C ₄
		A. C.	6	10	24	16
		B. C.	8	9	16	7

showing very considerable improvement in A. C. and slight improvement in B. C. Watch heard further away by a. d. was not heard further by a. s.

At an examination made April 30th, everything previously gained had been lost and the patient was virtually back where he was four months before. The watch a. s. was heard at 4", A. C. was again lost for C and C₁, and all the distressing symptoms had returned.

a. s	{	C.	C ₁	C ₂	C ₃	C ₄
		A. C.	0	0	16	12
		B. C.	10	8	15	8

The patient had opposed removal of the shelf from the septum nasi, so that nothing radical had been done. His treatment consisted essentially of a strychnine tonic and gr. xx, KBr., each night. Since then previous improvement has been partially regained.

I have spoken of the case as one with *Menière's Syndrome*. Pritchard would style it *Menière's symptoms* when the primary lesion is outside of the internal ear. It is otherwise styled *Menière's symptom-group*, or *Menière's complex* (or symptom-complex). Gustav Brunner would prefer to call it *vertigo Menière*. Dundas Grant would speak of it as a case of *pseudo-Menière disease*, for he cites Gradenigo and Gellé as authority for stating that "in the sclerotic form of non-suppurative otitis media, attacking the stapedio-vestibular articulation, the attacks may be typical of Menière's disease."¹ I would say that we have here a case of chronic non-suppurative middle-ear disease, attended with involvement of the labyrinth, or, in other words, a case of mixed disease, with vertigo, exaggerated to an unusual degree, simulating the apoplectiform condition found in true Menière's disease, (this term being, by common consent of most recent authorities, used only for cases with typical symptoms of apoplectiform labyrinthine vertigo. Some even would restrict it to effusion into the labyrinth with the characteristic symptoms).

The distinctive features of the case are:

1. No loss of consciousness, no convulsions nor any other signs of epilepsy, to leave room for doubt as to proper exclusion of that disease.
2. Vertigo occasionally apoplectiform.
3. Absence in the first attacks of marked tinnitus; its presence as a marked feature subsequently.
4. Unusual absence of tympanic marks of o. m. c. c.
5. Prominence of the neurotic hyperexcitability of temperament.
6. Presence of vertiginous aura.
7. Association of deafness for both low and high tones with improvement in both; subsequent loss for former without loss of latter.

French writers, notably Gilles de la Tourette², would look upon this as a true case of Menière's disease. They claim preservation of consciousness as a necessary feature of the disease, whereas German writers describe cases with loss of consciousness, thus possibly including cases of epilepsy. In all of Gellé's cases, but two, Menière's and Gruber's, had hemorrhage into the labyrinth. Again, Bonnier associates arterio-sclerosis with sclerosis of the middle ear and holds that the former increases "the intraglomerular and intra-

labyrinthine tension" and that subjects of Bright's disease are more likely than others to be attacked with Menière's disease. One of Barr's cases supports this contention.³ Further, the vertiginous sign of hyperexcitability of the labyrinth, is to be emphasized more than deafness, because deafness in labyrinthine disease is often unassociated with vertigo. This emphasis on irritability of the labyrinth is pointed out by Gustav Brunner⁴, who states that the vertigo Minière is not due to a condition of atrophy or paralysis but to one of *irritation in the semicircular canals*. Thos. Barr agrees with this⁵. This is also the clinical importance of the case of Moos⁶, in which the vertigo Menière continued so long as the caries of the semicircular canals lasted, whose final destruction and removal ended the irritation and with it the vertigo Minière. And Gille de la Tourette's expression, "hyperirritability of the labyrinth," means that the semicircular canals are the seat of undue irritation to the cerebellum causing perception of vertigo.

It would seem to me then, that, inasmuch as the French gave us the first recognition and description of the disease and have, in Charcot, Gellé and Andre Thomas and others, continued to be in the forefront in logical and scientific study of the pathology involved, they are entitled to first place on final opinions concerning it.

From my own limited study of the literature, it would seem to me that the association of vertigo with deafness (and perhaps tinnitus) constitutes the *ensemble* whose pathological cause is determinative in the disease. I would see in all cases in which they occurred together such pathological factors at work as would by their combined effect, bring about a state of "hyperirritability of the labyrinth." And I would think of this state as consisting in *high tension* of the intralabyrinthine fluids, producing upon the organ of Corti that effect in loss of function which like pressure or tension in glaucoma produces on the rods and cones of the retina. That the association of deafness and vertigo is not constant, may be due to differences of susceptibility to irritation between the cochlear and vestibular nerves.

The high tension, in the nature of things, must coexist simultaneously in both divisions of the labyrinth and could be brought about in various ways:

1. From exudation, as in inflammation of the labyrinthine vessels. Such cases would be furnished by diatheses with sclerotic arteries—Bright's disease, gout, syphilis, meningitis, etc.
2. From partial occlusion of the lymph channels, as conceived by Gustav Brunner in analogy to glaucoma (l. c.).
3. From hemorrhage, as in Menière's and Gruber's cases.

4. From impairment of motility of the oval and round windows, as in chronic middle ear catarrh.

5. From peculiar susceptibilities in the mechanism of the sympathetic nervous control—reflex neurosis.

Thus a high tension of endolymph that would destroy or impair hearing function in the organ of Corti would naturally be supposed to do harm of a like character to the function of the semicircular canals. But in the latter the function concerns equilibration and is brought about by transmission of influence through the vestibular nerve to the cerebellum. When tension is normal, the influence secures normal function, *i. e.*, the endolymph of the semicircular canals preserves equilibrium (if we admit the correctness of Goltz's hypothesis of the pressure-function); when tension is high, the influence is an irritation provoking giddiness. A common condition of tension explains involvement of both functions—loss, or impairment, of the senses of hearing and equilibration.

In support of this line of thought are the following:

1. All the clinical facts can be adjusted to it.
2. Transient vertigo with slight deafness find a ready explanation in mild cases from the side of the reflex-neuroses. This view has been well worked out by Gustav Brunner in his case,⁷ and is supported by the case of Politzer cited in his text-book (p. 832), a case of angio-neurotic paresis of the acoustic nerve which he successfully treated by galvanization of the cervical sympathetic. The mechanism of this cure must be apparent to all, the sympathetic containing as it does the nerves of vaso-motor control and thus of blood supply everywhere, and including in this case the labyrinth. An uncontrolled blood supply would permit of habitual high tension of fluids of the labyrinth, especially if it were associated with simultaneous narrowing of the lymph channels of escape, or impairment of mobility of the oval or round windows.

3. The theory is further supported by the clinical behavior of quinine in most of these cases. When given after the manner of Charcot in large doses for a long period, the effect, as Hans Brunner with Horner demonstrated, is to cause ischemia of the blood vessels. Gustav Brunner states that this effect is brought about through the paralyzing action of quinine in large doses on the heart. It appears to me that this is unsound and would better be attributed to some selective effect of the drug on the vaso-motor mechanism causing constriction of the arterioles, especially when these are in the system of end-arteries. Horner found the retinal arteries of a patient, blind for four days from excess of quinine, reduced to fine lines and some

of them even obliterated. Similar action on the arteries of the labyrinth would ultimately obliterate them, at one and the same time destroying vertigo and producing deafness.

4. The fact that many observers, notably W. Posthumous Meyjes,⁶ of Amsterdam, and Thomas Barr, of Glasgow,⁹ have found cases of Menière's symptoms associated with nasal obstruction, favors this hypothesis.

5. The nervous temperament of my own patient favors a reflex neurosis from his septal exostosis conceivable as selecting the portion of the sympathetic controlling the blood supply of the labyrinth, in this resembling the case of Gustav Brunner¹⁰.

6. The vertiginous aura preceding this patient's fall and other severer symptoms, also favors the sympathetic involvement.

If this putting of the case is reasonable (and it seems already to have many facts and authorities in support of it), then I see no good anatomico-pathological basis for separating cases into *mild* and *severe*, as does Gustav Brunner. For, as I have shown above, all forms and types would have the common pathological factor of disturbed intra-labyrinthine tension.

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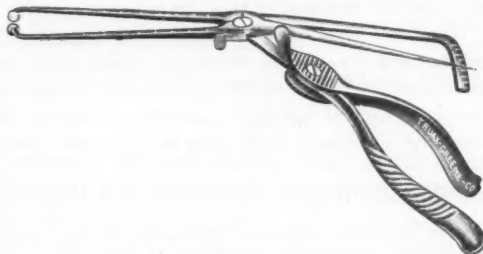
A NEW NASAL SEPTOMETER.

BY EDWIN PYNCHON, M.D., CHICAGO.

Professor of Rhino-Laryngology and Otology, Chicago Eye, Ear, Nose and Throat College.

At times, in order to operate intelligently upon the nasal septum, it is desirable to be able to accurately determine its thickness at different points, particularly in cases wherein nasal stenosis is due to projections from the septum when some deflection is an additional complication. In such cases the operator, with the assistance of a septometer, can more accurately decide just how much of a projection can be safely removed without danger of perforation.

While a fair estimate can be made as to the thickness of the septum anterior to the crest of the greatest prominence, by the eyesight alone, it is an entirely different matter when the thickness of the septum posterior to that point is to be ascertained. It is in such cases particularly wherein the septometer is invaluable. The desirability of a device of this nature has been previously appreciated, and attempts have been made to fill the want. The latest pattern of Seiler's septometer is the form which has been most popular, though in its use certain disadvantages are encountered which I have endeavored to overcome in the device herewith shown.



Nasal Septometer.

In this instrument two non-crossing arms, each about six inches in length, are pivoted at their exact centers so the motion of the pointed or index finger of one blade upon the graduated scale on the other blade will at all times show precisely the distance between the opposite or distal ends of the tapering arms, which bend inwardly, and terminate in bulbous points with flattened inner faces.

The upper surfaces of the distal half of these arms are graduated so that the distance of insertion within the nostrils may be noted, though the artist has failed to show the same. When in use the distal ends of the arms are caused to lightly press against either side of the septum by a small and slight spiral spring placed beneath the arms just forward of the joint. Of course when being used it will be conjointly with a nasal speculum, so the different points measured can be simultaneously inspected. The handle part of this instrument is patterned after the handles of a nasal speculum which I have for some time been using. The spiral spring which causes the measuring arms to approximate also keeps the handles apart, hence by compressing the handles the measuring arms are separated, which is the method of manipulation.

When resting upon the operating table the two separated handles at one end, and the closed points of the measuring arms at the other end, constitute a tripod support so the instrument may be more easily grasped by the operator's hand. At the point where the handles are pivoted a flattened corrugated surface both above and below is provided, whereby the instrument may be lightly held between the thumb and index finger.

After the measuring arms have been introduced, respectively one in either nostril, there is but little requirement for compression of the handles as, between the weakness of the spring and the flatness of the bulbous points, the arms will automatically work as the instrument is carried forward and backward over the prominences and depressions. As the proximal ends of the measuring arms are bent downward from the pivot they are below the range of sight so the view is unobstructed.

This instrument has been neatly constructed for me by Messrs. Truax, Greene & Co., of Chicago. In my opinion the illustration does not show the instrument to be quite as light and delicate as it really is.

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A NEW METHOD OF INFLATING THE MIDDLE EAR AND TREATING THE DISEASES RELATING THERETO.

In a recent issue of the *North Carolina Medical Journal* (October 20, 1899) a method of treating ear diseases is described, for which the author, Dr. Lucien Lofton, of Norfolk, Va., holds out great promise.

The instrument used is a stethoscope such as the one devised by Lewis Snofton, with the chest receiver detached. In its stead, a hard rubber mouth piece is substituted, the latter being held gently but firmly between the lips of the patient, while the ear attachments are applied to the ears. Suction is then made by the patient and

rapidly repeated so that the drum is caused to "vibrate." The effect may be limited to one ear by squeezing the tube leading to the other ear. The author believes the method superior to the Valsava method, catheterization, etc., and refers to a number of cases cured by its application.

This method of manipulating the tympanic membrane is certainly not new, the novelty consisting simply in the use of the stethoscope for this purpose. A point evidently overlooked by the author is the different effects obtained according to whether the soft palate is brought into play or otherwise. If this is raised, thus cutting off the naso-pharyngeal cavity, suction simply draws the drum forward, if not fixed by adhesions or ankyloses, and the middle ear is not "inflated." If the velum is relaxed and the nostrils closed, the middle ear shares in the rarification process, which would counteract this effect in the auricular canal and prevent the mobilization of the drum.

In the same manner, increasing the pressure in the stethoscope would be influenced by the position of the soft palate. If the naso-pharynx were cut off by this, blowing into the instrument would tend to drive the drum in, if this were possible as already explained, but there would be no "inflation" of the middle ear. If, however, the naso-pharynx participated in the process, the increased pressure in the middle ear would counteract the effects of the external pressure.

Even if the effects on the drum were all that is claimed for it, this is still a subject concerning which reliable authorities differ. It is claimed by those opposed to this method, that the effects on the tympanic membrane is limited to the parts which are not fixed by adhesions or ankyloses, and that the portions for which the mobilization is required are not influenced by the process. That it has some advantages in the hands of the experienced aurist, however, must be conceded, but it would certainly be unwise to use it indiscriminately in all cases of acute and chronic ear diseases as recommended, and especially when applied by means of an apparatus which is not fully under the control of the operator, and in which the effects cannot be carefully watched as in the instrument already used for this purpose.

SCHEPPREGRELL.

SOCIETY PROCEEDINGS.

SIXTH INTERNATIONAL OTOLOGICAL CONGRESS.

(Continued from Page 318.)

Rheumatic Diseases of the Ear.

V. UCHERMANN (Christiania): Rheumatic diseases of the ear are but little known and seem to be rare. The symptoms are apparently not sufficiently distinct, nor the etiology so clear as to establish a safe conclusion with regard to cause and effect. Still, I am of opinion that a closer investigation of the matter will enable us to recognize certain common features, symptomatic and pathological, by which a clinical diagnosis of the special cases can be made or rectified. To attempt this, and at the same time to draw the attention of my colleagues to an interesting group of ear diseases as yet little known, is the aim of this paper. At the outset we are met with the old difficulty, What is rheumatism? The answer from an etiological point of view appears to be more unsatisfactory than ever. Infection admitted, is it a specific infectious disease, or is it only a kind of pyemia dependent upon one or more pyogenic bacteria? Whatever the case may be, we have the clinical picture, which cannot be dispensed with. As we are well aware, the characteristics of the disease are—its tendency to attack the connective tissue (fibrous or muscular) and its endothelial-lined cavities, and to form fibrinous exudates and infiltrates. In this way it appears in the joints, muscles, heart, skin, etc. In addition to this there is its painfulness in certain localities, also it being acted upon by salicylic acid in acute forms, by atmospheric changes in chronic forms. It is necessary to set aside all cases whose only claim to being rheumatic is that they appear to have arisen after a rheuma—that is, a cold or catarrh. To this class belong, for instance, many of the so-called rheumatic cases mentioned by Gradenigo in his labyrinth diseases (Schwartz's Handbook). It is also necessary to differentiate between acute and chronic forms. Among the former the best known are the polyarthritis acuta (rheumatic fever), acute muscular rheumatism and erythema nodosum; among the latter, the chronic rheumatic muscular and joint diseases. All the rheumatic ear affections that have up to the present been described belong to the acute forms of rheumatism appearing as complications of rheumatic fever. Ménière (*Revue*

Mens. d' Otologie et Laryngologie, November, 1883) mentions a case where otalgia, in the form of severe intermittent pain, preceded by four days the attack of ordinary acute polyarthritis. A similar case is given by Wolff (*Verhandl. der Otiatrischen Section der Wiesbadener Naturforscher Versammlung*, 1887), who also adds that the joints of the ossicles can be affected. The clinical or pathological proof, however, is not given. In both cases the appearance of the drum does not seem to have been altered. Moos has observed a case of apoplectiform (Ménière) deafness during the period of convalescence after acute rheumatic fever, complicated with endocarditis (perhaps embolic). In a second case various cerebral hyperæsthetic symptoms appeared with attacks of pain and hyperacusis in the eighth and ninth weeks, hardness of hearing ending in total deafness (Schwartz's Handbook, tome i, p. 544). Among the deaf-mutes in Norway is a case where an examination of the ear points to the existence of a combined middle-ear and labyrinth affection caused by this disease (Uchermann, "The Deaf-Mutes in Norway," vol. i, p. 446).

I have seen two cases where ear affection preceded ordinary rheumatic fever. Both cases were of adults; one a lady of twenty-five years of age, who had had rheumatic fever several times before, the other a gentleman of thirty-five, of very rheumatic disposition. In both cases there was an acute inflammation of the middle ear, with marked injection of the drum, abundant secretion of serous or sero-fibrinous fluid; together with quite an unusual amount of pain, both spontaneous and when touched, which continued even after the opening of the drum. In the case of the lady, during the fourteen days before the beginning of the fever, an infiltrate formed on the posterior wall of the bony meatus, involving the adjacent parts of the drum, of the size of half a pea, red and very sensitive. In the man's case there was a swelling of the posterior part of the drum, also a more diffuse swelling and sensitiveness of the septum cartilagineum nasi on the same side, with superficial (catarrhal) erosions. In both cases the ear affections healed after eight days with the beginning of rheumatic fever, possibly the result of paracentesis and salicylic acid, though the swelling of the septum did not disappear for several months, and caused considerable impediment to the nasal respiration.

But there are also other cases where the rheumatism from which the ear affection arises is of a chronic character, and where the ear disease itself runs a course less acute and violent, but sometimes for the organ itself more fatal. In the case of a young man about

thirty, with a marked rheumatic history, I have seen without any apparent cause, and alternating with rheumatic affections of the throat, a bilateral, so called, otitis media serosa, that is, a collection of serous or sero-fibrinous yellowish fluid in the tympanic cavity, with the slightest inflammatory signs. The case ran a slow course, but finally yielded to repeated incisions of the drum. I venture the hypothesis that many of the cases of serous middle ear affections, especially those marked by yellowish or amber-colored exudate, are rheumatic in origin or foundation, and that treatment with salicylic acid should be tried before any surgical intervention is resorted to. In another case, that of a young, plethoric man about thirty-four, the symptoms when I first saw him (February, 1895) were the following: he complained that for a year he had suffered from tinnitus aurium and deafness of progressive character, which latterly had greatly increased. He experienced no dizziness, and hitherto he had enjoyed good hearing and freedom from ear-troubles. Occasionally he had felt rheumatic pains, but otherwise had never had a disease of any consequence. On examination the right drum revealed a small round cicatrix (as big as a shot); in the upper and hindmost quadrant there was a little dullness, but no retraction, the left drum being also dull and not retracted. Both the drums were movable by Delstanche. By auscultation the left ostium tubæ Eustachii was found narrower than the right, otherwise nothing was abnormal. From the left ear the hearing of speech was gone. He could neither hear No. 64 of Appun's set of tuning-forks (64 double vibrations in a second) nor Galton's whistle. Rinne was $-5''$, Schwabach much shortened ($-$). On the right ear Rinne was $+5''$, Schwabach was $-$. The deeper tuning-forks were heard more distinctly than the higher, the Galton not at all. On this side he heard words spoken in a loud voice at a distance of from three to four inches. In spite of internal treatment with salicylic acid and iodide of potassium, together with local treatment (leeches, injections of iodide of potassium and pilocarpine, massage (Lucae, Delstanche)—after a couple of months he was completely deaf. At his repeated request at last I tried a stapedectomy on the left ear. On probing, the stapes at first gave the impression of immobility, but by traction became loosened, and then was immediately replaced. The only result was considerable giddiness for a month, during which time he had to lie quite still on his back. At the same time he had rheumatic pains in the right shoulder. About a year later there appeared a reddish, fluctuating swelling of the left eyebrow and upper eyelid, with its seat in the periosteal tissue. By incision I removed about a tea-

spoonful of sero-fibrinous fluid, upon which the swelling disappeared. A year after, however, it reappeared in nearly the same place, and yielded to the same treatment. On this occasion there was also a swelling over the left tuberositas frontalis. Last year he called on me for a nose affection. There was a dry catarrh of the anterior part, with a formation of crusts and a dry perforation of the cartilaginous septum of considerable size. It had developed since the last time I had seen him, and proved very stubborn under the ordinary treatment. In connection with this case I might mention two similar affections of the nose that have come under my notice; one the case of an elderly man, very rheumatic, who eventually died of rheumatism (articular, etc.), owing to general exhaustion. The other case now under my treatment, where there is no perforation, but the pale, swollen mucous membrane is specked with white fibrous (sclerotic) spots.

It is then a case of what is commonly called secondary sclerosis, with involvement of both the labyrinthine bony capsule and the nervous elements. The history of the case and its accompanying symptoms make it fairly certain that it is of rheumatic nature, and, like the affections elsewhere, bound to the connective tissue. For instance, a swelling of the lining of the canalicula for the N. cochlearis and the lining of the vestibulum, with the result of more or less fixation of the stapes, will easily account for the acoustic phenomena. While with regard to the bone (labyrinth capsule) the result may be an eburneation (though with the preservation of the greater cavities—vestibulum, scalæ, etc.), or may be, in some cases, the apparent reverse, a rarefaction ("spongiosirung," Siebenmann). To sum up:

1. Rheumatic fever is sometimes preceded, sometimes accompanied, by otalgia, alone or together with an acute swelling and injection of the drum and the adjacent bony meatus, followed by a serous or sero-fibrinous secretion of the middle ear (otalgia, myringitis, otitis externa, otitis media *rheumatica*), or it may be complicated during its progress with affections of the middle ear and the internal ear (labyrinth, perhaps the auditory nerve).
2. There are other more independent rheumatic ear diseases with persons of a rheumatic constitution or tendency (previous rheumatic fever, etc.). The ear affection appears as an otitis media serosa with yellowish, half-brinous exudate, or as a (secondary) sclerosis with progressive character.
3. The characteristics of the different forms are: In the *acute* forms—painfulness, excessive injection, and the tendency to the

formation of fibrinous exudates. In the *chronic* forms—the tendency to the formation of fibrinous exudates, and the tendency to affect the bony capsule, with severe tinnitus and slow but steady progression. Salicylic acid seems to influence the acute forms but not the chronic. These latter, judging from the experience of a case at present under my treatment, are perhaps more influenced by a general rheumatic treatment.

In the discussion which followed Dr. HARTMANN said: The paper of Dr. Uchermann reminds me of one patient who probably comes in this line. A man slept one very cold and wet night in the woods; when he awoke he found he had completely lost his hearing.

Dr. UCHERMANN, closing the discussion, said: It is possible that Dr. Hartmann's case comes in this line, but we will have to differentiate between acute catarrhal inflammation of the ear and rheumatic inflammation of the middle ear. One is easily accessible to treatment with salicylic acid, the other is not. Furthermore, in rheumatic cases we always find other manifestations of rheumatism; exceptionally, rheumatic otitis shows infiltration and exudation in the ear alone.

Therapy of the Tympanic Mucous Membrane — GOLDSTEIN
(St. Louis):

The author advocates conservatism in the treatment of chronic middle-ear affections. Mastoid and intra-tympanic operations are frequently undertaken where patience and care in the application of less radical measures are available.

An interesting bacteriological point was discussed in that micro-organisms can be harbored within the confines of the middle-ear cavity for so long a time without giving rise to a further extension of the inflammatory process. Suppurations of the middle ear are frequently found which have existed for years without much indication of tissue destruction, or disturbances to the patient. Micro-organisms find an especially favorable habitat on mucous membrane, and this suitable culture medium, supplemented by the moist serous surface and fairly uniform temperature of the tympanic cavity afford the best possible opportunity for the rapid spread from an infected focus. Over 70 per cent of suppurative affections of the tympanic cavity are due to an extension and infection from the naso-pharynx through the Eustachian tube. Through this portion of the mucous tract and extension to the tympanic cavity is rapid; conversely, in chronic suppurative infections of the middle ear an extension to the attic, antrum and mastoid is slow. It will be interesting to determine the reason for this decided difference of the same micro-

organism to spread; on the one hand the rapid spread through the naso-pharynx via Eustachian tube to the tympanic cavity; on the other the slow progress from the tympanic cavity via attic and antrum to the mastoid cells.

Preference is given to the "dry treatment" in suppurative otitis media, and the promiscuous use of the syringe decried. Numerous reasons and opinions are advanced in setting forth the disadvantages of the frequent use of the syringe and lavage, and the author concludes with the claim that this form of treatment is contra-indicated in active suppurative cases where large perforations of the membrana tympani exist, and where free entrance of the syringing fluid into the tympanic cavity is so easily effected. The statement is offered that many of the cases requiring mastoid interference or ossiculectomy have been unconsciously produced by the too liberal use of the syringe in cleansing the tympanic cavity.

The indiscriminate use of the nasal douche, especially when handled by the patient himself, is commented upon and subsequent infection of the tympanic cavity as the result of this procedure is pointed out.

The Eustachian catheter is liberally used in connection with a nebulizing or vaporizing apparatus in chronic suppurative otitis media to accomplish the three-fold purpose of inflating the middle-ear cavity, of clearing the tympanum of pus and of medicating the middle-ear cavity from within.

Inflation of the middle-ear cavity is accomplished by a steady current of air, continued five minutes at a time, in conjunction with a nebulizing apparatus and Eustachian catheter. Long standing cases of suppurative otitis media have yielded to this treatment where all other methods have failed.

Where the discharge is profuse, the above method of treatment is supplemented by a gauze packing, selecting narrow strips of plain sterilized gauze for this purpose.

Medicated liquid petroleums are extolled in the treatment of chronic non-suppurative catarrh of the hypertrophic form and have even been found of therapeutic advantage in mild sclerotic otitis media.

A special feature of this paper is the intra-tympanic injections of medicated liquid petroleums. Applications to the tympanic cavity are made as follows: A short hard rubber Eustachian catheter is introduced in the usual manner and snugly fitted into the naso-pharyngeal orifice of the Eustachian tube, the tight fit being necessary to avoid leakage at the tip of the catheter when the fluid is forced into the tympanic cavity. A glass-barrel syringe, two inches in length

and one-half inch in diameter, supplied with a cone-shaped tip is tightly applied to the distal end of the catheter. The syringe is loaded with a solution containing iodine, 3 grains, carbolic acid, 4 grains, benzoinol or albolene, 1 ounce. When the catheter and syringe are properly adjusted, the patient's head is tilted well backward and inclined toward the ear to be medicated. The piston is pressed home slowly, and in the majority of cases, after six or eight drops have been delivered, the patient will state that he feels an unusual fullness in the ear. The syringe is then adjusted to the cone-shaped tip of the compressed air apparatus; a few short taps, and then a steady pressure continued for eight or ten seconds is given. This insures the penetration of the tympanic cavity by the fluid.

The above technique is applied either alone or in conjunction with some form of pneumatic massage of the membrana tympani.

The value of pneumatic massage in selected cases is emphasized.

LEDERMAN (New York) endorsed the remarks of Dr. Goldstein and desired to emphasize the importance of treating pathological lesions in the nose and naso-pharynx in cases of chronic middle-ear catarrh. It had been his custom for the last few years to treat the mucous membrane of the Eustachian tube in a similar manner as practiced upon that of the nose and naso-pharynx. The intimate association of these cavities was readily seen in cases of acute otitis following catarrhal conditions of the nose and post-nasal space. Suitable aeration of the tube and middle ear were important factors in the treatment of these cases. For this reason obstructions of the nose or naso-pharynx should first be looked to. After these passages were free applications in suitable strength might be made to the tubes and middle ear. It was always advisable to begin with solutions—iodine in combination with menthol about five grains of the former to ten of the latter to the ounce of any oily menstrum, preferably benzoinol. This had acted satisfactorily in his hands. In suppurative conditions cleanliness played a very important part.

BALLENGER (Chicago) protested against the inference that existing hypertrophy of the mucosa of the middle ear or nose could be materially reduced by the topical application of vapors or oily emulsions as described. When hypertrophy was present there was permanent thickening of the tissue and it could only be removed by caustic or surgical measures. The value of topical measures to true hypertrophy was limited to their influence upon the vascular and lymphatic circulation. In this way the local processes might be so modified as to reduce the vascular engorgement and to accelerate the lymphatic flow, thereby establishing a better absorption process in the mucosa.

On the Extraction of the Stapes, with Demonstrations of Histological Preparations—POLITZER (Vienna).

The simple mobilization of the stapes had only a temporary effect on the hearing. Where the improvement was more lasting it was due to a tearing of the adhesions. Better results were obtained by dividing the adhesions formed between the branches of the stapes and the walls of the niche of the fenestra ovalis. The operation of the extraction of the stapes was founded on an experiment with animals. It had been found that in birds and rabbits, after the extraction of the stapes, a new membrane was formed, closing again the fen. ovalis. His own experiments on rabbits confirmed this fact, and, in addition, he found by microscopical examination that no pathological changes were produced in the labyrinth. The operative extraction of the stapes in cases of the so-called sclerosis of the middle ear was, according to his experience, of no use, because his investigations had shown that the cause of the fixation of the stapes was a proliferation of bony tissue of the labyrinth, which even after removal of the stapes eventually closed up the fenestra ovalis.

The results of the extraction of the stapes in cases of non-suppurative middle-ear catarrh with formation of adhesions were still too few for us to form a definite opinion of its value. In cases of chronic middle-ear suppuration a good number of observations had been made. The histological examination of microscopical sections showed the following: On sections which passed through the nitch of the fen. ovalis and vestibulum one saw the inner wall of the tympanic cavity covered by a granulated mucous membrane composed of round cells. This same granulation mass filled the nitch of the fenestra ovalis, and, passing forward from there through the labyrinth window into the vestibulum, filled out the whole cisterna persymphatica. This granulative tissue was firmly fixed with the utriculus and surrounded it on all sides. The wall of the utricle itself showed inflammatory thickening. In the horizontal semicircular canal the connective tissue network was in a state of inflammatory infiltration invaded by round cells and intersected by dilated vessels.

More conspicuous changes were found in the cochlea. Here the inflammatory proliferations had entered both cochlea turns, reaching as far as the top, principally, however, in the scala tympana. It started mostly from the inversive of the cochlear canal and from the lamina spiralis and showed the same structure as the connective tissue proliferation in the vestibulum. Where the stapes had been removed either intentionally or accidentally during the performance of the

radical operation, even when the immediate results had been favorable, still little was known about the ultimate results.

Tarse was of the opinion that the extraction of the stapes might be performed without danger to the hearing. But against the number of cases where the hearing was improved must be placed a series of cases in which it was destroyed. Prof. Politzer then cited a case which had come under his observation. This case, the first in which the labyrinth was histologically examined after the extraction of the stapes, was very important in securing the indication for the operative removal of the stapes. During the course of suppurative otitis media it showed the possibility of a spreading of the inflammation into the labyrinth, and might possibly be given as the explanation why the hearing was impaired after the extraction of the stapes. He for one, therefore, was against the performing of this operation during the course of chronic suppuration of the middle ear. But when the suppuration had passed, and there were adhesions between the branches of the stapes and the niche of the fenestra ovalis, there was, he thought, a distinct future for the operative extraction of the stapes with a view to improving the hearing. This opinion was based upon observations made by others and also upon a case which he had under his notice.

On the Curability of Hitherto Incurable Deafness by Means of Vibratory Massage of the Conducting Apparatus—OSTMANN (Marburg).

(This paper will appear in full in a subsequent issue of THE LARYNGOSCOPE.)

F. COHN (New York) said he had used the massage apparatus for three years. When he first received it he was hopeful that it was going to help him in improving the hearing. When he had used it several months he became less hopeful, but he hoped that it might assist him in tinnitus. But after three years' conscientious use he could not say that he had been helped any. He was now speaking of the electrical vibration massage. He found that the noise stopped for a few minutes, but was resumed in ten minutes or so. He thought he had received better results with the Delstanche apparatus. It was true he had not used it like Prof. Ostmann for twenty-five minutes. But, on the whole, he did not see any benefit from electrical vibration massage.

DUNDAS GRANT: Within the last year and a half he had employed another method of massage which he had the honor of describing before the German Otological Association. The mode of

vibration was a mechanical one and the patient felt it shaking up to the interior of the ear. He thought this method of treatment would be beneficial in all those cases of patients who heard better in the midst of a noise, but he had found it did not answer in all. There had been just a sufficient number of cases, however, considerably improved as regards their hearing and relief sometimes completely of the tinnitus to encourage him to try the method of mechanical vibration before telling the patient that nothing could be done. In some cases the results had been singularly gratifying, while it was in only a comparatively small number of cases that benefit had accrued in a disease like progressive deafness, where everything else left them so much in the lurch, the method he had indicated ought not to be wholly neglected.

GOLDSTEIN (St. Louis) expressed himself in favor of massage whether by the original method of Delstanche or by one of the various forms of mechanical devices. He did not agree with Prof. Ostmann on the length of time. In his paper he (the speaker) touched on the injection of oily preparations into the tympanic cavity just prior to the massage. He believed that the presence of these oily medications in the tympanum softened the adhesions and in that way brought about more effective results.

SCATLIFF (Brighton) was understood to express himself favorably to massage.

PROF. OSTMANN closed the discussion.

The Pneumatic Treatment of Diseases of the Ear—G. NUVOLE (Rome).

(This paper will appear in full in a subsequent issue of THE LARYNGOSCOPE.)

Twentieth Century Prognosis in Chronic Catarrhal Deafness—SARGEANT F. SNOW (Syracuse).

The apathy of the medical profession regarding so-called chronic catarrhal deafness, the woeful resignation of the afflicted and the improved facility for combating this disease impelled him to ask a few moments indulgence. For many years the chronic type of this affection baffled the skill of foremost otologists and gradually it took a place in the list of non-preventable and incurable maladies. Even now it did not seem safe to assume that those almost totally deaf could be improved, but they must admit that the recent advances had changed their prognosis in other conditions. Why not in the great body of chronic catarrhal cases, where for instance words in a forced whisper could still be heard ten inches or better. Of late they had been led

to expect too much from purely nasal operative work when with 80 per cent of such cases recurring catarrhal inflammations still remained as an important causative factor. Chronic catarrhal deafness was a preventable disease. In every one of these patients they would find besides their nasal trouble some functional disorder or a habitual and gross transgression of nature's laws. These errors must be corrected. Assuming that their patients were sensible and intelligent people it was just and expedient that we should go quite into detail in explaining nature's method of repair and the different steps of treatment. No further encouragement or promise was necessary if they made the points clear. An ignorant patient failed to appreciate the obstacles. Their best policy was to be honest. The plan that appeared to him most reliable was chronic catarrhal deafness was to see that each removable cause was taken care of, then after the parts were healed make a new test of the hearing and begin the second stage of their work. They must not expect much improvement in hearing during or soon after the nasal operative stage. Chronic catarrhal deafness was not so formidable, but the fact that the patient was adding to it so many days in each year was the reason they were baffled.

Dr. Taylor said they ought to tell their patients that the treatment will last all their lives, if necessary.

Dr. Holmes also recommended frankness with patients.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, October 25, 1899.

Robert C. Myles, M.D., Chairman.

Apparent Tracheal Stenosis in Case of Aneurism of the Arch of the Aorta with Specimen.

Dr. Francis J. Quinlan reported a case occurring in his service at the City Hospital during the previous week. A man had been admitted two days before he had seen him, the visiting physician had examined his chest and concluded that the marked cyanosis was due to a tracheal stenosis. It had seemed to the speaker that there might be an aneurism of the aorta. On examination of the larynx he had found the right cord in a condition of abductor paresis, the other cord doing all the work. On closer examination he had found pus issuing from the posterior commissure in considerable quantity. After the cavity of the larynx had been cleaned and cocaineized he had found the mucous membrane pushed over to the median line with considerable submucous infiltration. A low tracheotomy was concluded. Three drops of a 4 per cent solution of cocaine had been used in performing the anesthesia. An incision was then made through the crico-thyroid ligament and the cricoid cartilage divided. The blood had welled up most profusely, making it difficult to reach the trachea, but finally succeeded in introducing a tube, this gave immediate relief. The tube was inserted very carefully, keeping in mind the possibility of pressure on the vessels. The patient remained comfortable that afternoon and evening, but next morning the same dyspnea and cyanosis reappeared, which was somewhat relieved for a time by the use of nitroglycerine and heart tonics. The man died three days later, and the post-mortem examination had revealed an enormous unruptured aneurism of the arch of the aorta. The purulent infiltration had evidently been secondary to the aneurism. He had seen four cases within three years in which the cord had been in this state of unilateral abductor paresis, and as it generally associated with aneurism of the arch of the aorta.

A Contribution to the Technique of Modern Uranoplasty.

Dr. James F. McKernon read a paper on this subject. He said that, at the suggestion of a general surgeon, he had tried the plan of administering the anesthetic through a tracheotomy tube, keeping in the tube for eight or ten days, and feeding by rectum, thus giving an opportunity for the healing without infection of the operation wound. He had used the method in four cases, the oldest over twenty years, and the youngest, three years old. In all four the cleft had extended through both the hard and soft palate. The chloroform should be administered in the usual way; then tracheotomy should be performed and the anesthetic continued through the wound in the trachea. The mouth gag having been inserted, a large flat piece of sterilized gauze, with string attached, is placed at the back of the tongue, thus shutting off the larynx and esophagus. Several such gauze pads should be on hand ready for use. After cleansing of the operative field and vicinity the edges of the cleft were prepared, beginning at the lower portion. As a rule, scissors were preferable for this purpose, as they leave a beveled surface which is conducive to accurate approximation. Having freshed the edges of the soft palate the hard palate should be prepared in the same manner. The incision should be continued in the form of an ellipse at the apex around to the opposite side. When a rudimentary uvula was present care should be taken not to destroy this, as it was a great help subsequently. A curved incision was next made in the hard palate close to the alveolar border, extending through the mucous membrane and periosteum to the bone. A small, rather sharply curved periosteotomy should be used to separate the periosteum from the bone, care being taken not to injure the palatine vessels. An "apron" was thus obtained, which could be easily approximated in the center. Before inserting the sutures the bleeding from the edges should be stopped by the application of hot gauze sponges. For the insertion of the sutures he used specially made needles, a right and a left. The sutures should be passed from before backward, and, as a rule, about one-third of an inch apart. There should be absolute freedom from tension. After cleansing of the oral cavity with a normal salt solution, a thin strip of sterilized gauze should be passed to the under surface of the soft palate and the posterior pharyngeal wall. Sterilized gauze should also be used over the whole of the operative field, the gauze being pressed rather closely against the under surface of the new palate. Should vomiting occur during recovery from the anesthetic the wound must be redressed. This

vomiting could sometimes be averted by the hypodermic injection of morphine in adult cases before they recovered from the anesthetic. The nourishment should consist of peptonized milk for a period of a day or two, and then liquid peptonoids should be added. A normal salt solution should be given in the rectum at intervals, especially at night, as it relieved the thirst. The nurse should hold a pad over the anus for fully half an hour after the nutrient enema had been given to insure its retention. The packing should be removed each day and replaced by clean gauze because of the increased salivary secretion. The sutures should be removed one or two at a time. Silk sutures could rarely be left in more than eight days, but this was long enough to accomplish all that was to be expected of them. About the tenth or twelfth day, the patient being able to take food by the mouth, the tube could be removed. The tracheotomy wound would then soon heal. The following cases were reported:

Case I.—An anemic man of twenty-two years, whose palate had been operated upon, though unsuccessfully, when nine years old. Silk sutures were used in this case. There was no vomiting. The dressing was removed on the second day, and changed thereafter daily. At the end of the fifth day two sutures were cut and removed on the following day. On the tenth day some warm milk was given by mouth, and two days later the tracheotomy tube had been removed. The patient had been kept under observation four months, during which time his general health had greatly improved, and his articulation had become decidedly better, but there had not been so great a change in this respect as would have occurred in a younger person. At the end of twenty months the man had reported that he was able to talk fairly well.

Case II.—A woman, twenty years of age, who not only had a cleft of the hard and soft palate, but a congenital hare lip. At the age of four years the hare lip had been operated upon, but the stitches had torn out, leaving a larger cleft than at first. There was a large cleft in the hard palate, and no uvula was present. Talking was so difficult and painful that she rarely attempted it, and never in the presence of strangers. There was marked hypertrophy around each Eustachian orifice. The turbinated tissues were hypertrophied and covered with mucus. The width of the cleft in the hard palate was a little over three-fourths of an inch at its junction with the soft palate. The closure had been effected with silk sutures of medium size. The hare lip had also been operated upon, the wound being dressed with sterilized flexible

collodion. The last sutures had been removed on the eleventh day when there had been complete union. Three weeks after operation the first attempt had been made to teach her to talk, and this instruction had been kept up for four months. When seen some months later she could carry on a conversation almost perfectly, except for the pronunciation of a few sounds. Her general condition had also been very greatly benefited.

Case III.—A widow, thirty-three years of age, had sought treatment because of impaired hearing. Twelve years before, at the time of her marriage, she had had teeth drawn and a plate fitted over so as to imperfectly cover the cleft. When this plate was removed she could hardly talk at all. Examination showed the cleft to be an inch in width at its widest part. The mucous membrane of the pharynx was dry and atrophic, and there was marked atrophy of the mucous membrane around the Eustachian orifices. There was marked retraction, with thickening of the membrana tympani, and marked diminution in hearing on the left side. The left Eustachian tube had been found almost occluded. She had begun to breathe badly as soon as the administration of the chloroform through the tracheotomy tube had commenced. After time ether had been substituted, and then her respirations had become natural. Owing to the thickness of the periosteal flap heavier silk had been used for the suturing. The last sutures had been taken out ten days after the operation, and healing found to be perfect. Because of the age of the patient very little improvement in speech had been promised, nevertheless there had been a decided gain in this respect, and her tinnitus had disappeared and the hearing had been greatly improved.

Case IV.—A girl of three years, seen on January 9, 1899, There had been a cleft in the soft palate and in the posterior two-thirds of the hard palate. A rudimentary uvula was attached. Owing to regurgitation of food it was difficult to feed her. There was always a croupy cough at night. Adenoids were removed under ether one month before operation on the palate. Silver wire sutures had been employed in this case because of the excellent results obtained with them by Dr. Lester. The needle was not threaded until it had been passed through each flap. The sutures had been placed about one-third of an inch apart. There was a marked vomiting on recovering from the anesthetic, necessitating a renewal of the dressings. The child had been very restless for the next two days. The last sutures had not been taken out until the end of two weeks. The union was perfect. One

month after operation the first attempt had been made to teach the child to talk. Improvement in this respect had been very rapid and gratifying during the six months which had elapsed.

When there was a cleft in both hard and soft palate, the speaker advised that both be closed at one sitting, as this caused less shock and gave better union than when each was closed separately. As a rule the silk should be removed in from seven to ten days, while silver wire should be left for several days longer. The lateral incision should be packed lightly with gauze, as this favored good approximation. If the operation were done before the child had learned to talk the effect on the speech function would be better than if done later. He did not believe the preliminary tracheotomy in an uncomplicated case added any special risk to the operation, owing to the compensating advantage of greater cleanliness of the wound and the increased rapidity allowable in operating. The operation improved the condition of the nose, pharynx and ears, and had a most beneficial effect on the patients' mental condition as well as their general health, and markedly improving their speech.

Dr. B. Farquhar Curtis said that the reader of this paper was to be congratulated on his excellent results. He approved of operating upon cleft palate at a very early age; that is, before the children had learned to talk in the wrong way. If the operation were deferred until the child was six years old it was true the parts would be larger and the operation to that extent made easier, but the muscles were not properly developed and the speech function was apt to be very much impaired on this account. He adopted the idea of Wolff in operating early and dividing the operation into two parts. By doing this the lateral incisions and the separation of the periosteum from the bone, and all the bloody manipulations would take place at the first sitting, so that at the second there would be little or no hemorrhage. The tedious part of the operation was the adjustment of the stitches and approximation of the flaps, and was done at the second sitting. This could be done very much more easily when there was but little bleeding, and this was an advantage also for the child. He believed, therefore, that statistics would be improved by dividing the operation in this way into two parts. For the separation of the flaps he used a rather broad elevator, keeping the finger pressed on the mucous membrane on the opposite side, thus guiding the work by the sense of touch and controlling the hemorrhage. Sterile gauze should then be packed in between the bone and flap, and then the process repeated on the other side. Much less blood was lost in this way,

as a rule, than by the other method, and the operation was so short that there was little or no reaction. A few days or one week later the paring and the other steps of the operation were done. Another point to be considered was the question of doing a tracheotomy. It had always seemed to him that the introduction of a tracheotomy for an operation on the mouth or throat, even in adults, meant the addition of an unnecessary risk, and in operating on the tongue, or in doing a laryngectomy, he had always had the best results when he had not done a preliminary tracheotomy. The introduction of the tracheotomy tube was liable to result in a pneumonia. Fluid could be prevented from entering the larynx while operating upon cleft palate by having the child's head hanging over the edge of the table in an inverted position, the blood collecting in the upper naso-pharynx and flowing out of the nostrils, which are then the most dependent opening. The only advantage, therefore, of the tracheotomy seemed to be that the operation could be done without any pause. It seemed to him to be more dangerous in children than in adults, because of the greater liability to infection of the bronchi.

Dr. Charles H. Knight said that the single point in the technique which commended itself to him was the manner in which the sutures were introduced by means of a specially devised needle. He was by no means sure of the desirability of dressing the wound by packing the oral cavity with gauze, thus necessitating the preliminary tracheotomy. He was convinced that the latter imposed upon the patient an additional risk without a compensating advantage. The daily changing of the dressing showed that the treatment of the wound was not such as might be employed in other parts of the body. It is impossible to keep the dressing aseptic for any length of time, the danger of blood and debris entering the larynx during the operation may be readily obviated by placing the patient in Rose's position, hence there seems to be no reason for the preliminary tracheotomy. The difficulty of opening the trachea and the subsequent risks involved should not be estimated too lightly.

It was well known that in some cases the stitches would cut through, even in the absence of undue tension. The explanation might be found in a neglect to secure a proper state of health before operating. The effect of operation upon the temper and disposition of the subjects of cleft palate, particularly the older ones, was quite remarkable. He recalled a girl of ten years operated upon some years ago. She had previously been very peevish, yet

in a few months she had become so cheerful and happy that he could hardly recognize her. He would like to know whether a similar effect had been observed after the adjustment of an obturator. It had seemed to him that any mechanical appliance might be so irksome to some individuals as to be practically intolerable.

Dr. Arthur B. Duel said that he had no cases in which there had been a complete fissure in the hard palate, but he had seen enough of Dr. McKernon's work to be convinced of the advantage of the preliminary tracheotomy in those cases. From a limited experience in the treatment of cases of cleft of the soft palate he was convinced that there was a distinct advantage in making the lateral incisions a few days prior to trimming the edges and uniting the median fissure. The small quantity of ether required at the second operation, and consequently the diminished liability to vomiting and soiling of the wound, was an advantage. With the large lateral incision needed to relieve tension, there was always an impairment in the circulation which would probably be much improved by waiting a few days before completing the operation; and this naturally tended to secure better union. He had himself devised a simple needle which seemed to him to greatly reduce the time required for the insertion of the sutures—certainly in his own case it had lessened the time fully twenty minutes. The point containing the needle was exactly parallel with the shaft of the instrument, and width of the stitch was always determined by pushing the shaft to the edge of the cut surface and drawing the needle forward, thus making an interval of about an inch between each stitch. Moreover the stitches were bound to be inserted parallel to the preceding ones. With this needle they could be inserted quickly without making loops or using a right and left hand needle.

Dr. Emil Mayer asked if any one present had had any experience with the hypodermic injection of atropia before an operation of this kind. One such case had been reported, in which, following the hypodermic injection, the mucous membrane had become so dry that the pouring of the saliva over the wound had been obviated. His own experience had been confined to the treatment of cases in the soft palate only. It seemed to him that the best suggestion made by Dr. Lester, who was mentioned by the reader of the paper, had been that the sutures be brought in first before any roughening of the edges. In a case upon which this method had been tried the ultimate result had been perfectly satisfactory although at one time it had looked as if all of the sutures would slough

out. In this case the wire sutures had not been taken out until over four weeks after operation.

Dr. T. Passmore Berens suggested that if the jaws were pushed together in the manner described by the last speaker, the result would be a very bad arrangement of the teeth in the upper and lower jaws and a very high arch to the palate. He did not approve of this method.

Dr. M. D. Lederman asked Dr. McKernon whether he had generally found a hypertrophic condition of the neighboring structures, turbinals and adenoid vegetations. In a case now under his care a mass of adenoid tissue, as large as a quarter, had been removed. He has seen a few cases of cleft palate in which these tissues were considerably hypertrophied, thus demonstrating that negative atmospheric pressure is not such an important factor in generating enlargements of these parts.

Dr. Quinlan said that tracheotomy seemed to him a very formidable operation, because of the danger of septic bronchitis or pneumonia. He was surprised, therefore, that the members had not administered a sterner rebuke to the author of the paper for such trivial reference to a preliminary tracheotomy. It could not be denied that the results obtained by Dr. McKernon had been so excellent as to somewhat counteract this notion in his own mind. He referred to a case in which, by the use of the suprarenal extract, he had been able to control hemorrhage and make the necessary dissection with ease. The case was one of ordinary cleft palate. A figure of eight incision has been practiced in the hard and soft palate during the past five years which relieves the great tension on these parts.

Dr. J. H. Woodward congratulated the reader of the paper on the excellency of his technique and on his results. He did not think any series of reported cases were superior to them. Such results could not be secured unless the principles underlying the operation were correct. The care taken to relieve all tension upon the sutures was probably one of the secrets of that success. The doing of this at one sitting had been possible because of the preliminary tracheotomy. There were traditions in medicine which were incorrect, and this one about tracheotomy being so dangerous in these cases seemed to him a case in point. He would like to know from the members how many cases of septic bronchitis or pneumonia they had met with as a result of a tracheotomy. Personally he would prefer to do a preliminary tracheotomy, if called upon to do a bloody operation on the mouth. The mode of dress-

ing the wound seemed to him open to discussion; it was a matter to be settled by an appeal to future experience.

Dr. R. C. Myles referred to a case of operation on a cleft palate which he had reported and presented to this section some years ago. The success in that case he believed depended upon the extensive incisions that had been made along the borders of the hard palate. The operation had been done under cocaine anesthesia on a man over twenty years of age. He had been improved in every sense by the operation, his speech ultimately becoming fairly good. The subject of tracheotomy under these circumstances was a rather new one, but he could not help being aware of the danger of septic bronchos-pneumonia in cases of tracheotomy associated with extensive wounds of the throat. The suggestion about using suprarenal extract in these cases seemed a valuable one, especially if used on the surface and hypodermically.

Dr. McKernon closed the discussion. He said that previous to using the present method he had tried the plan of doing the operation in two sittings, and the results had not been nearly as good as by doing it at one time. He saw no corresponding benefit to the patient, the operation at one sitting not being inordinately long. The sense of touch in using the pinastal elevator, as Dr. Curtis had said, was a sufficient guide in this step of the operation. Even with the head very low down the blood would sometimes collect in the pharynx, and was prone to run into the larynx; hence, the advantage of the tracheotomy. It had seemed to him that the gauze packing was desirable, protecting the operative field from external infection. It did not seem to him possible to introduce the stitches—complete sutures—into the hard palate before the loosening of the flap, no matter what form of needle was used. He did not advocate preliminary tracheotomy for operation on the soft palate alone, but only where there was a complete or nearly complete cleft in both the hard and soft palate. In the future he would use only silver wire for the sutures, as the approximation was better and the sutures could be left in longer. He had had no experience with atropia in these cases. Regarding the procedure proposed by Dr. Lester, he agreed with Dr. Berens as to the disastrous effect on the teeth. He was opposed to deferring the operation until after puberty; certainly far better articulation was secured by operating earlier. In all of the cases the turbinates had been enlarged; in one the tissues had been atrophic, possibly owing to the age of the patient. Regarding the preliminary tracheotomy, he would say that two general surgeons in this city are practicing it,

with uniformly good results. The danger of this procedure upon a normal case seemed to have been exaggerated by some of the speakers, as in all the cases which they cited the tracheotomy had been done to relieve existing diseased conditions, and a tracheotomy for these cases from the standpoint of danger and mortality should not be placed on a comparative basis with a simple, uncomplicated and such as advocated. Since the writing of this paper three more cases have been successfully operated upon by this method.

ABSTRACTS AND BIBLIOGRAPHY.

Arranged and Edited by
FAYETTE C. EWING, M.D., St. Louis,
with the collaboration of the
EDITORIAL STAFF.

It is our purpose to furnish in this Department a complete and reliable review of the world's current literature of Rhinology, Laryngology and Otology.
Authors noting an omission of their papers will confer a favor by informing the Editor.

I. NOSE.

The Bacteriology and Histology of Ozena—V. COZZOLINO—*Annals Otol. et Rhinol.*, August, 1899.

A scholarly discussion of the bacteriology and histology of ozena in which the author concludes that micro-organisms are secondary in their effects to the primary factor of a favorable soil for their development. He contends that the bacillus (*bacillus mucosus*) is not the prime etiologic factor in ozena, but that the micro-organism finds a favorable soil for its development in the nasal fossæ, which are endowed by virtue of their embryologic and teratologic natures, with features highly commendable for a microbic habitat—in fossæ that are normal there will be no such growth. In forty-two cases he found the *bacillus mucosus* in all; pseudo-diphtheria bacillus eight times; *staphylococcus pyogenes aureus* nine times; *staphylococcus pyogenes albus* seven times; *sarcina aurantiaca* once; *streptococcus pyogenes* in long chains four times; filamentous bacillus once; *bacillus prodigiosus* once; non-classified cocci twice; *bacillus pyocyaneus*, green variety, seven times, and tubercle bacillus once, in an exposed patient. The investigations confirm Loewenberg's (1888-94) observation that the *bacillus mucosus* is present in all cases of atrophic rhinitis. Abel (1894) arrived at the same conclusion from a close study of 100 cases. The author, while admitting that the *bacillus mucosus* is the prime etiologic factor thinks it responsible for two of the most disagreeable symptoms—*fetidity* and *crusts*. The etiology of the bone atrophy, and in consequence, of the mucosa can be found in a nutritive alteration of one or both turbinated bodies. The ozenous child is born *ozenous*; he comes into the world with a special predisposition for these nutritive changes, which determine an erosion of the bone, and its ultimate destruction, and an atrophy or this mucosa of the turbinated bodies. The author cites as evidence that the disease is not due to a specific micro-organism, but to a local predisposition, the fact that it is strictly local, and of a chronic character. Therefore ozena is not infectious.

F. C. E.

Diagnosis and Endo-Nasal Treatment of Empyema of the Frontal Sinus.—DR. GUSTAV SPIESS, Frankfurt, Germany.—*Abstract of a Paper presented to the Meeting of the British Medical Association, Portsmouth, August, 1899.*



The diagnosis of frontal sinus empyema was, up to a few years ago, extremely difficult. We are now, however, able to make in most cases an exact diagnosis with nearly absolute certainty. The sub-

jective symptoms may be suggestive, but they are not in themselves to be trusted. There are three methods by which we may arrive at an exact diagnosis:



1. The examination of the nose: this may give a suggestion.
2. Exploratory syringing through the nose opening may in certain conditions confirm the diagnosis.
3. Exploratory punctures from the interior of the nose: this makes the diagnosis absolutely certain.

After discussing the appearance of pus in the nose, the writer refers to the uncertain results obtained by trans-illumination of the frontal sinus, as according to Vohsen the frontal sinus is wanting on both sides in 14 per cent of cases, and in one side in 20 per cent. Hence the obscurity of one frontal sinus, associated with pus in the front of the middle meatus on the same side, might raise a suspicion, but would not do more than this. He then refers to the use of the Röntgen Rays, and to the probing and washing out of the sinus through the infundibulum. He states that it is always difficult to know when the frontal catheter had actually entered the sinus, and had not strayed off into one of the infundibular cells.

This brings him to the advantage of his special method, which practically consists in so controlling the position of a probe by means of the X-Rays that he does not hesitate to drill an opening from the nose into the frontal cavity. The writer employs a drill about 3 mm. thick, worked by electricity. The operation is thus executed: After thorough application of cocaine this drill, 3 mm. thick, is introduced into the nose, if possible, as far as the nasal roof. Then the room is darkened; the direction and position of the drill is verified on the Röntgen screen. The drill must be directed exactly to the center of the frontal sinus, avoiding also the anterior wall. As soon as the drill is in motion one easily sees on the Röntgen screen how it advances slowly until it has entered into the open space of the frontal sinus. The boring is interrupted from time to time in order to prevent the drill getting too hot. The operation is claimed to be not very severe, and to be executed in a few seconds. The author has operated on ten cases without observing any hemorrhage. He thinks that puncture of the frontal sinus by boring under the control of the X-Rays could be done easily, quickly, and with absolute certainty, so that a diagnosis can be made every time, and that as regards treatment he considers that the endo-nasal trephining ought to be first employed in every case and an external operation should only be employed if success is not obtained by his method, or if the patient insists upon operation. So long as the external operation does not give absolutely certain results, the author cannot conscientiously advocate it.

STCLAIR THOMSON.

Half-tones by courtesy of the editors of "THE PRACTITIONER."

The Building of a Nose Upon a Metallic Base—*The Therapeutic Gazette*, October, 1899.

In a leading article upon this subject, the suggestions of Marten are quoted. This author states that the ulceration is generally due to the fact that the flap, taken for the formation are insufficient.

For substantiation he refers to some illustrations published with his original article.

The base of support, not necessarily bone, should be large and not subject to any great pressure. The scaffolding upon which the nose is built may be displaced owing to the constant motion by the contraction of the face muscles. This may be pre-empted by firm fixation.

LEDERMAN.

The Importance of the Early Recognition and Treatment of Catarrhal Diseases—W. SCHEPPEGRELL—*New Orleans Med. & Surg. Jour.*, Sept., 1899.

The fallacious theory that patients will outgrow catarrhal affections has been responsible for many cases of defective hearing and serious throat and chest diseases. Children especially should have early treatment, which frequently gives brilliant results at this time of life.

Many affections of the ear are insidious in their development, and frequently do not come to the attention of the aurist until serious pathologic changes have been effected. The treatment in these cases is often unsatisfactory, while good results might have been obtained had they been recognized in their early stages and prompt treatment applied.

SCHEPPEGRELL.

II. MOUTH AND NASO-PHARYNX.

Notes on Adenoids—ALEX. FRANCIS—*Austral. Med. Gaz.*, Vol. xviii, No. 8, August, 1899.

The article deals chiefly with the indications for operation, and the author holds that: "To operate in cases of adenoids where there are no symptoms either as regards the ears or general health is not only unnecessary but unjustifiable." In dealing with the question of the advisability of operating he also holds that there are two classes of cases met with. In the one the operation is imperative, in the other conditional. The first includes convulsions, especially in children after babyhood, and all grave conditions of the ears. The second includes all other cases. These have to be decided on their merits.

The author believes: "There is a strong antecedent probability of some recurrence of the hypertrophy, however well the operation may be performed." He knows of several instances where a child presented no symptoms of the presence of adenoids until after an operation for their removal. It is extremely difficult to make sure of leaving a clean, smooth vault. The author believes it necessary "to choose a good day, and to get the surroundings as favorable as possible for the operation." He finds that the nasal and post-nasal wounds will not heal quickly in moist, cold weather, and that one of the chief objects to be aimed at, in order to avoid recurrence, is to get the raw surface to heal as quickly as possible.

In operating, he prefers a particular modification of Læwenberg's forceps, with which he removes the greater part in three or four pieces, and then a few sweeps of a ring knife, as a rule, leaves a perfectly smooth surface.

As to the position in operating, he thinks it well to have the head lowered, but that it is important to have it on a gentle slope, and not hanging sharply over the edge of the table, since in the latter position the stretching of the neck and the possible laryngeal spasm is greater than when the head is on the table with the shoulders slightly raised.

Ether he believes contraindicated on account of the venous congestion. Notwithstanding the statements of the Vienna pathologists, he holds that chloroform is as safe in this as any other operation as long as proper care is taken in the control of the bleeding. In two cases of others and one of his own, death, which seemed imminent, would have been ascribed to chloroform syncope, whereas, in reality, the trouble was blood in the larynx, and all anxiety was relieved the moment this was removed. In these cases the danger was not supposed at the time to arise from interference with respiration, for the patients continued to perform respiratory movements.

EATON.

III. ACCESSORY SINUSES.

Acute Frontal Sinusitis—HENRY L. SWAIN, New Haven, Conn.—*Medicine*, November, 1899.

The author holds that the recurrence of influenza lessens the resistive powers of the nasal mucous membrane, and predisposes to the more frequent occurrence of acute frontal sinusitis.

Diseases of the middle turbinate region may create foci of infection near the opening of the canal, leading to congestion and increased secretion, which if retained results in pus with all its attending symptoms.

In the treatment he advocates the liberal use of hot water externally and hot salt solutions locally in the nose.

STEIN.

A Report of the Operative Treatment of Frontal and Maxillary Sinusitis—F. W. HINKEL—*Buffalo Med. Jour.*, Nov. 1899.

The author, in an interesting article, calls attention to the operative treatment of a number of cases. In a case of frontal empyema with antral symptoms an incision was made along the inner half of the left supraorbital ridge, a little beyond the middle of the globella, the soft parts and periosteum were retracted, and the anterior wall of the left frontal sinus opened with a small trephine. The incision thus made has a cosmetic advantage over the vertical one. The sinus was filled with a greenish offensive pus. The incised tissues were protected by a dam of iodoform gauze, and the sinus flushed with a normal salt solution. The walls of the sinus were thoroughly curetted, and the naso-frontal opening enlarged until an ample opening communicated with the nasal chamber. A strip of iodoform gauze was inserted in the enlarged infundibulum, and the external incision closed by silk suture—usual aseptic dressing applied and retained by a gauze bandage. Intra-nasal insufflations of iodoform were applied every three hours, after gentle spraying with a normal salt solution. The gauze drain was removed on third day. On the sixth day the stitches were removed. Good union had taken place, and on the eighth day after operation patient was discharged cured. There has been no return of the symptoms of the disease.

The main point of interest in the preceeding case was the immediate cessation of the antral discharge as soon as drainage of the frontal sinus was secured.

In two cases of chronic antral empyema, operations were performed after the method of Luc; viz., the antrum opened through the canine fossa, a counter opening through the nasal wall, beneath the inferior turbinate, and then closing the opening through the canine fossa by stitching the mucous membrane of the oral conjunction.

In the first case the gingivo-labial incision was sutured, and some difficulty was encountered when later stitches were made, as the stitches primarily inserted were more or less torn. In the second case, the gingivo-labial incision was not sutured and the parts coapted nicely. The author, therefore, infers that suturing of the gingivo-labial incision is unnecessary. The wound need not be disturbed. Patient being fed on soft food, and using the opposite side of the mouth in masticating, and avoid blowing the nose violently.

E. D. LEDERMAN.

Diagnosis and Therapy of Diseases of the Nasal Sinuses—SEIFERT—*Münchener Med. Wochenschrift*, May 23, 1899.

At a meeting of the Medico-Physical Society at Wurzburg held April 23, the author read a paper on the above subject. As a means of diagnosis in cases of suspected sinus trouble he urges the use of negative Politzerization. The nasal cavities having been first scrupulously cleaned, so that no secretion can be seen, the patient is given a swallow of water which he is to swallow at the word of command. The compressed Politzer bag is then held tightly to one nostril and as the patient swallows, it is allowed to expend. The consequent rarification of the air in the nostrils draws out the secretion from the sinuses, if there be any. Of course a careful inspection of the nasal cavities should be made as soon as the maneuver is completed. The mere act of drawing out the secretion has a curative effect in many acute cases; as is shown by the healing of seven cases of acute empyema of the frontal sinus and four cases of acute empyema of the maxillary sinns under this treatment.

VITTUM.

IV. LARYNX AND TRACHEA.

What Causes the Shallow Depressions in Pachydermatous Thickenings Over the Processus Vocalis?—A. KUTTNER—*Archiv. für Laryngologie*, Band ix, Heft 3, 1899.

The author endeavors to show that both Virchow and Frankel were right in their varying views as to the cause of these depressions. He has of late come across a case which shows that they cannot depend wholly on pressure of the opposed cord, for this case the two cords were situated in such different planes that when they were ap-

proximated one could still look down into the shallow depression on the left side. His view is therefore that Virchow was in part right in attributing this depression to the closer adherence of the mucous membrane to the underlying cartilage. The author, however, thinks that both the eminent authors are partly in the right, for he inclines to the view that both causes have to do with the matter in hand.

VITTUM.

The Mechanics of Coughing—AD. VALENTIN—*Archiv. für Laryngologie*, Band ix, Heft 3, 1899.

After citing the explanations that have been current for years, especially the view that the edges of the tightly closed glottis were suddenly and violently driven asunder by the current of expired air, the author advances an explanation of his own.

He places the order of events as follows: "A sudden and very deep inspiration with abduction of the cords is followed by a forcible adduction of the latter, causing a firm closure and compression of the glottis. At the same time occurs an increasing compression of the chest by the muscles of expiration, the lower jaw is somewhat dropped, the mouth open, the tongue pointed and projected slightly forward. The soft palate is elevated. Then follows the real concussion of coughing. The spasmodically closed glottis is not by any means forced open by the column of expired air, but the spasm of the adductors suddenly ceases and one can see how the previously adducted arytenoids and vocal cords become abducted with lightning-like rapidity. The glottis opens often to the widest possible extent. After the impulse of the cough is over, the cords close again, but not so tightly as before. Of course the sudden and great expansion of the glottis is due to a reflex contraction of both postici. This contraction differs from the ordinary inspiratory contraction mainly in the rapidity of its occurrence." The author has assured himself of the correctness of these views by numerous laryngoscopic examinations and by animal experiments.

VITTUM.

The Treatment of Pulmonary Tuberculosis by the Inhalation of Antiseptic Nebulæ—HOMER M. THOMAS, Chicago, Ill.—*Va. Med. Semi-Monthly*, October 13, 1899.

The advantages of nebulization are: Control of cough, relief of dyspnea, intimate contact of the antiseptic nebulæ with the inspired air, and inhibition of the extension of tubercular foci. A hospital has recently been established in this country where this method of treatment is being effectively used.

Of the various preparations used by the author, he has had the best results from formalin, commencing with a four per cent solution of the forty per cent aqueous commercial solution, in water, and increasing the strength daily until twenty per cent is reached.

SCHEPPEGRELL.

V. EAR.

Acute Inflammation of the Middle Ear—How Shall we Treat It?—H. O. RIEK—*Mary. Med. Journ.*, October, 1899.

The author mentions those cases of frequent earaches occurring in children, and passing away without suppuration, but returning on the slightest provocation. In these instances examination of the throat will reveal some form of inflammation, enlarged tonsils or adenoid tissue in the pharynx.

Where redness of the drum is seen with bulging, prompt incision is recommended. Leeching is also suggested as a good remedy. Antiseptic precautions should be taken before incising the membrane. Hot water douching also affords relief. The local application which has given the writer the most satisfaction is a combination of cocain muriate gr. ii, atrop. sulph., gr. j., aq. dest. ʒj. Eight to ten drops being placed in the canal, after being heated. Calomel in small doses should be administered, and the nose and throat should receive attention.

LEDERMAN.

Report of a Case of Acute Purulent Endo-Mastoiditis Developed in the Course of a Chronic Otorrhea; Followed by an Extra-Dural Abscess with Sloughing of the Dura Mater; Metastatic Abscess of the Lung with Spontaneous Evacuation of the Cavity—Recovery—P. M. PAYNE—*Annal Otol. et Rhinol.*, August, 1899.

An interesting case of a Spanish cabin boy, aged sixteen, brought to the New Orleans Sanitarium, December 9, 1897. A Schwartz operation was performed by Dr. A. McShane. Temperature continued at about 103°. Cough and rigors developed, and suppuration was so foul and abundant that an extensive Stacke was done December 17th. Temperature fluctuated from 96°/10° to 106° until December 29th, when a mass was observed to pulsate in the wound which proved to be a slough of the dura mater. Thorough irrigation removed much fetid pus from the region of the lateral sinus, after which he seemed better, continuing until January 27th, when he was discharged. The site of the lung abscess was never located, its existence being determined by the bad smelling pus which he coughed up daily, especially during the rise of temperature.

A letter written from Liverpool, and dated March 3d, acknowledged himself in a perfect state of general health with complete recovery from the local affection.

F. C. E.

Otitis Media—Diagnosis and Treatment—M. A. GOLDSTEIN—*Interstate Med. Jour.*—November, 1899.

This paper, a clinical lecture before the McDowell Medical Society of Missouri, discusses in order the several forms of otitis media, congestive, suppurative and non-suppurative. The author believes that atrophic is the sequel of hypertrophic rhinitis, and

sclerotic otitis the sequel of hypertrophic otitis. The generally approved ground is taken in diagnosis, pathology and prognosis, and the paper is chiefly notable for some excellent methods in therapy, described, and for the author's position with regard to syringing in suppurative otitis media.

Both aspiration and inflation are employed for evacuating the pus contents of the middle ear. Aspiration is effected with a Siegle's speculum and small syringe attached. The tube is fitted tightly in the meatus, and the piston drawn slowly. This may be followed by Politzerization, but better by continuous inflation with Buttle's inhaler in connection with the air tank. The patient is made to blow steadily, with cheeks puffed out, through a small caliber tube, while the inhaler is applied tightly into one nostril with the finger compressing the other. This produces the same effect as the word "hic," advocated by Politzer and Gruber. The "dry treatment" is emphatically advocated, and the "wet" as positively condemned—the douche decried. The syringe is objected to because copious introduction of fluids into the ear will produce that bagginess and infiltration of the membrane we wish to avoid, especially in large perforations. A small tuft of cotton on a carrier will cleanse the meatus as effectively as a large current of antiseptic fluid. With large perforations there is the additional danger that the fluid may force infectious material into the healthy area of the tympanic cavity. Boracic acid is too mild an antiseptic; iodoform is odorous, stimulates granulation tissue, and cakes. Nosophen is non-irritant, insoluble, antiseptic, does not cake, and offers a minimum of toxic absorption, and has been used with excellent results.

F. C. E.

VI. DIPHTHERIA, THYROID GLAND, ESOPHAGUS, ETC.

Foreign Body Removed from the Gullet—WM. CHEATHAM—*Louisville Monthly Journal*, November, 1899.

The foreign body was a piece of bone which was removed by means of a horsehair bougie.

SCHEPPEGRELL.

Antitoxin in the Light of Scientific Investigation—A. ROBIN—*Internat. Med. Mag.*, October, 1899.

The writer effectually disposes of the arguments advanced by Herman in a recent paper published in the *Medical Record*, entitled "The Failure (!) of Antitoxin in the Treatment of Diphtheria." He presents a large amount of statistical information from the records of the hospitals of Europe, which demonstrates unmistakably the value of antitoxin. Turning to the laboratory, he shows that the testimony from this source is overwhelming in its support of the serum. As pathologist and bacteriologist to the Delaware State Board of Health, Robin is in a position to speak with authority.

DETWILER,

Some Practical Points in Intubation—A. G. BLINCOE, Bardstown, Ky.; *Louisville Month. Jour. of Med. and Surg.*, October, 1899.

A detailed description of the technique of intubation. The author uses the modified tube, which has but one instrument for both introducing and extracting. This obviates the use of the obturator, thus permitting air to pass through the tube while it is being introduced.

SCHEPPEGRELL.

The Use of Calomel in Diphtheria—T. D. COLEMAN—*Internat. Med. Mag.*, October, 1899.

In the hands of the writer, calomel has been of the greatest service in the treatment of diphtheria. His rule is to give a large dose of the drug at the beginning, regulating it according to the age, and then to give hourly doses until characteristic "chop-spinach" movements appear, then the interval is increased until the drug is left off entirely. He has never seen any bad results follow the use of the drug, even in enormous doses. He mentions that his father gave to a boy of five years 360 grains in three days, and the child made a good recovery.

DETWILER.

VII. INSTRUMENTS AND THERAPY.

Beta-Eucain as an Anesthetic in Eye, Nose and Throat Work—

W. H. POOLE—*Med. News*, October 21, 1899.

The author has used Beta-Eucain in certain eye work, and in throat, nose and ear operations as follows:

Furuncle of auditory canal; paracentesis of drum; hypertrophied turbinate; galvano-cautery; polypi; enchondroma and foreign body. These are his conclusions:

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6. It is less dangerous to the cornea than cocain inasmuch as it does not cause desquamation of the superficial epithelium.

F. C. E.

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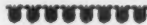


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NOTES.

Announcements.

Dr. Ellet O. Sisson, formerly Professor of Anatomy and Director of the Microscopical Laboratories in the College of Physicians and Surgeons of Keokuk, Iowa, has been elected Professor of Public Hygiene and State Medicine and Director of the Histological Laboratory in the recently consolidated medical schools of that city.

The *Atlanta Medical and Surgical Journal* and the *Southern Medical Record* of Atlanta, have consolidated to form the *Atlanta Journal-Record of Medicine*. The first number of the new periodical appeared April 1, and contained seventy pages of high-class reading matter. Drs. Wolff and Roy are the editors. THE LARYNGOSCOPE extends best wishes.

Dr. Fayette C. Ewing, of St. Louis, will attend the International Otolological Congress as a delegate from the Western Ophthalmologic and Oto-Laryngologic Association.

Heroin in Chronic Respiratory Affections—CHARLES J. LANG—*Medical Times and Register*, March, 1899.

The chief field of usefulness of this new remedy will be found to lay in chronic conditions of the respiratory tract. He has obtained decided benefit from its exhibition in chronic bronchial and pharyngeal catarrhs. Its effects are manifested in from one-half to one hour, the cough being notably lessened in frequency, and expectoration rendered much less difficult, the smaller bronchi being more readily and freely emptied. In incipient phthisis it proved of much service, and had a tendency, where there was a daily rise of temperature, to produce a reduction of from 0.5 to 10. The author advises that in cases where alcoholic stimulants are administered, they should be given at least one-half hour before the heroin, or not sooner than three hours afterwards. He also points out that while the therapeutic action of heroin resembles that of codeine, its toxic action is much less than that of the latter, while its dose is considerably smaller, so that in medicinal doses it may be said to be absolutely devoid of toxicity.

The Causation and Treatment of Consumption—JOHN R. KESTELL—*Read before the Wayne County Medical Society*.

I have little faith in specifics in the treatment of tuberculosis. I believe it is entirely a disease of malnutrition, as a result of defective elimination, and all therapeutic measures must be directed toward the improvement of the digestion and assimilation. Consequently I am explicit in my instructions as to diet, forbidding absolutely the use of alcohol, syrups, potatoes in any form, pork, veal and all such dishes as are difficult of digestion and prone to fermentation. In many of these cases of alimentation I have found it beneficial to give some good diastasic extract of malt, that known as Maltine proving most satisfactory, for the reason that it is the only malt extract known to me which gives generous proportions of nitrogenous and phosphatic matter, with a proper proportion of carbohydrates: being made, as it is, from wheat and oats, in conjunction with barley, instead of barley alone. Tonics, stimulating the nervous system and digestive organs, and assisting in the reconstruction of blood and tissue, are important. Stimulating baths may be used with good results. It is, in my opinion, a mistake to overwhelm the body with frequent injections of undetermined animal serum, thereby producing either a severe reaction or possible accumulative toxemia.

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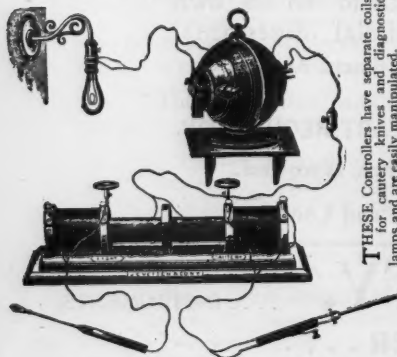
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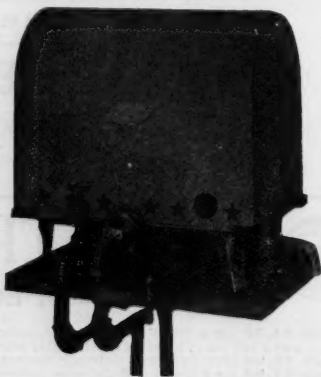
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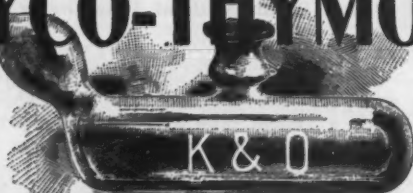
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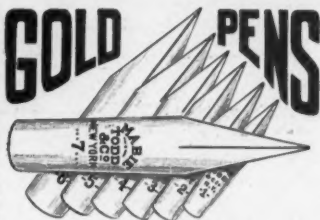
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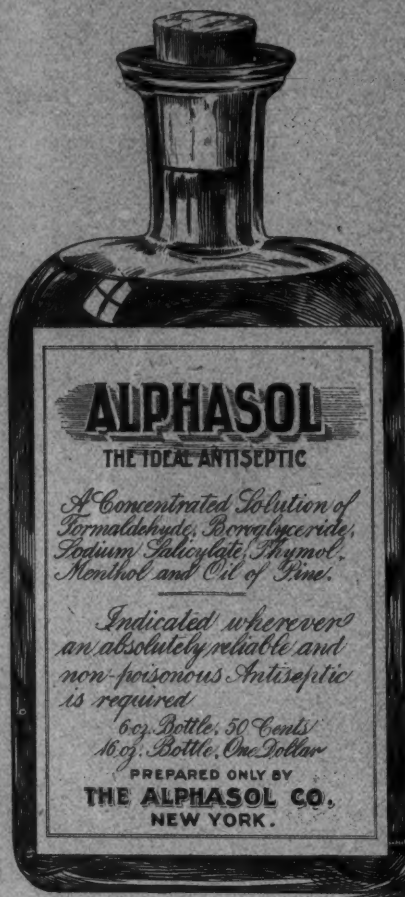
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